ABSTRACT

EDUCATIONAL LEADERSHIP

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A TRACKING COMPARISON OF AN INNER-CITY MIDDLE SCHOOL SIXTH GRADE STUDENTS' PERFORMANCE IN READING AND MATHEMATICS FOLLOWING AN INTERVENTION METHOD WITH ONE GROUP OF STUDENTS

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The purpose of this study was to determine if a reading and mathematics intervention method administered to students during their seventh and eighth grade years in an inner-city middle school positively affected their performance on the Georgia Criterion Reference Test (GCRT) taken in the eighth grade. The independent variables were gender and team; the dependent variables were grade point average and Georgia Criterion Reference Test results; and the intervening variables were the mathematics intervention and the reading intervention.

A quasi-experimental study was conducted. This study looked at the difference among means in the subject areas of reading and mathematics of two groups of students. One of the groups was administered an intervention in reading and mathematics and the other continued to receive traditional instructions. The focus is on the effect of the intervention

methods over a two-year period on sixth grade students. The GCRT was administered to both groups, as sixth graders in early 1988-89 and again as eighth graders in 1990-91 to assess readiness for grade levels. The study looked at the gains made by sixth graders over a two-year period by selected demographic factors. The t-test of independence was the statistical tool used.

Twelve hypotheses were formulated for the study. Eight (three, four, five, six, eight, ten, eleven, and twelve) were accepted and four (one, two, seven, and nine) were rejected. The level of significance for acceptance or rejection of the null hypotheses was set at the .05 level.

Based on the statistical findings, it is safe to say that the data support the assumption that the use of an intervention method to reinforce basic skills is no more effective than traditional instruction. It was recommended that the study be replicated using a similar population makeup, and involve students from the suburbs or rural areas instead of inner city youth. It was also recommended that policies be written governing how the intervention method should be implemented with guidelines spelled out for both teachers and students.

A TRACKING COMPARISON OF AN INNER-CITY MIDDLE SCHOOL SIXTH GRADE STUDENTS' PERFORMANCES IN READING AND MATHEMATICS FOLLOWING AN INTERVENTION METHOD WITH ONE GROUP OF STUDENTS

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CHAPTER 1

INTRODUCTION

An inner-city middle school participated in this study. It was a mid-sized middle school with a population of 842 students, serving grades six through eight. Student participation in the federal lunch program averaged 72 percent. Attendance averaged 92 percent, with a mobility index slightly lower than the average for the system. Remedial services are provided for those students who qualify according to Iowa Test of Basic Skills (ITBS) scores as established in the Chapter I Program guidelines. The median income for parents of students attending this inner city middle school was $8,450. Prior to 1987-88, this inner city middle school's results were often below the average for the state, metro and city on the Georgia Criterion Reference Test (GCRT). In an effort to improve GCRT performance at this inner city middle school, a summer inservice program was held. The workshop was designed to address the needs of the schools from an analysis of the objectives. Top priority was given to the objectives that the schools were farthest from which related to city performance, then state performance. After the ranking of the objectives, teams were assigned to develop an instrument that would test student performance on a regular

basis rather than at the end of the sixth and eighth grade year. The results of the developed instrument was used to determine where students needed the greatest academic assistance. Instruction was then directed toward the weak areas each semester rather than waiting until the GCRT was administered to get an assessment of the students' performance level. This intervention method was utilized to make certain that the mean scale scores for both sixth and eighth grade students were higher than those of the system and the state in both reading and mathematics.

Purpose of the Study

The purpose of this study was to determine if a reading and mathematics intervention method administered to students during their seventh and eighth grade years in a middle school positively affected their performance on the GCRT taken in the eighth grade. Similarly, these students took the GCRT in the sixth grade and based on their performance, were tracked in the seventh and eighth grades for the administration of an intervention. In the eighth grade, students that were involved in the intervention process and mentored took the eighth grade GCRT in reading and math. Statistical findings from a combination of the two groups should help administrators better plan to address students' academic preparation.

Background of the Problem

Over the last 10 to 15 years, there have been and still is a great focus on achievement test performance. Parents, teachers, and school administrators have noted an increase in student expectation as it relates to standardized test performance. While there is a need for better performance on achievement tests, the increase in the poverty rate, dropout rate, teenage pregnancies, child abuse, neglect, and unemployment impact achievement test performance. Administrators and teachers find themselves constantly being asked to raise student achievement levels while the number of disciplinary problems increase. Parents, teachers, and school administrators have cited a decrease in student performance on achievement tests and an increase in unacceptable behavior and disciplinary problems among today's students (Smith, 1988). The students that are not performing well on achievement tests are often called at-risk students. Aloustein and Desilets (1988) state that at-risk students are those who experience negative academic performance (including poor standardized test results), fail to pass in homework, complete assignments, or participate in a positive way in the classroom, have high absentee/truancy rates, and often act out and become discipline problems. These are several variables that affect student performance on achievement tests; but if instruction is good and is measured on a regular basis, these students can and will progress, and will do better on standardized tests.

Statement of the Problem

As a progressive middle school concerned with the academic progress of all students, the GCRT has served as an indicator of students' readiness for grade level work. The GCRT has revealed that this middle school as a whole, was performing below the level of the system on some objectives, but below state level on too many objectives. Thus, the problem to be addressed was that students were performing below grade level on the GCRT on several objectives and what could be done to have all students perform on or above grade level on the GCRT. The study covered several key issues that were addressed by the research questions. The research questions served as a guide for the collection and analysis of information to uncover relevant findings.

Significance of the Study

This study was undertaken with the hopes that the findings will provide administrators and teachers with information to make the curriculum relevant and increase students' academic performance. Thus, the schools' overall academic performance should compete with that of the state's on the GCRT. The school is not a separate entity from the community and with that philosophy, any improvement in the school's academic performance reflects positively on central level administrators, the building level administrator, teachers, parents, and students. But, most importantly, the

school will have a working model for addressing and correcting students' academic performance if it is proven that these reading and mathematics intervention models are effective.

Research Questions

1. Is there a significant difference between the female sixth grade and eighth grade experimental students' mathematics performance on the Georgia Criterion Reference Test (GCRT) at a selected middle school?

2. Is there a significant difference between the male sixth grade and eighth grade control students' mathematics performance on the GCRT at a selected middle school?

3. Is there a significant difference between the mathematics performance on the GCRT of eighth grade male students who have received intervention instruction and male students who have not at a selected middle school?

4. Is there a significant difference between the mathematics performance on the GCRT of eighth grade female students who have received intervention instruction and female students who have not at a selected middle school?

5. Is there a significant difference between the mathematics performance on the GCRT of eighth grade male students who have received intervention instruction and female students who have not at a selected middle school?

6. Is there a significant difference between the mathematics performance on the GCRT of eighth grade female

students who have received intervention instruction and male students who have received intervention instruction at a selected middle school?

7. Is there a significant difference between the reading performance on the GCRT of sixth and eighth grade experimental students at a selected middle school?

8. Is there a significant difference between the reading performance on the GCRT of sixth and eighth grade control students at a selected middle school?

9. Is there a significant difference between the reading performance on the GCRT of eighth grade experimental students and eighth grade control students at a selected middle school?

10. Is there a significant difference between the reading performance on the GCRT of eighth grade male students who have received intervention instruction and eithgh grade male students who have not at a selected middle school?

11. Is there a significant difference between the reading performance on the GCRT of eighth grade female students who have received intervention instruction and eighth grade female students who have not at a selected middle school?

12. Is there a significant difference between the reading performance on the GCRT of eighth grade male students who have received intervention instruction and eighth grade female students who have not at a selected middle school?

Summary of the Introduction

As a whole, the GCRT revealed that a large percentage of middle school students were performing poorly. This research project looked at one middle school in a metro school system that implemented an intervention method to improve academic performance. The selected school had a large percentage of its students not performing above state level on the GCRT on some of the objectives. The data studied showed the sixth graders' performance on all objectives to determine what objectives needed to be addressed to remedy the problem. During the seventh and eighth grades, students who were performing poorly were tracked and given remedial work to correct their deficiencies in these objectives. Any improvement shown by students after experiencing the intervention method pointed to a positive avenue for improving students' academic performance and should be welcomed by administrators and teachers.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The publication, A Nation At Risk: The Imperative for Educational Excellence, by the National Commission on Excellence in Education (United States Department of Education, 1985), reinforced public concerns and included strong criticism regarding the mediocrity of the system of education in the United States "that threatens our future as a nation and a people" (p. 3).

The public perception that students are less prepared than they were in the past resulted in political efforts to improve schools and raise standards, particularly through the use of state mandated testing programs. With the Georgia Department of Education's continuing to adapt teaching to business practices and with the continued cry for specificity and exactitude in curricular areas, criterion-referenced assessment is no longer a choice, it is required.

The review of research for this study will focus on students' performance on the Georgia Criterion Referenced Test (GCRT) in the middle grades. The specific topics which will guide the research review will be:

1. Gender impacts performance in middle schools
2. Grade level performance in middle schools

3. Georgia Criterion Referenced Testing
4. Academic Intervention Program
5. Other related middle school studies

Gender Impacts Performance in Middle Schools

Studies reviewed and reported in this section are primarily relative to gender and its influence on performance in the middle school. Feliciano (1986) compared males and females on mathematics item performance. The first objective of this study was to investigate sex differences in the selection of incorrect responses on a mathematics multiple-choice test, and to determine whether these differences were consistent over three consecutive administrations of the test. A second objective was to compare male and female performance in problem solving after controlling for computational skills (Feliciano, 1986).

The responses of all sixth grade students from the public schools in Puerto Rico who took the Basic Skills Test in Mathematics-6 ("Preuba de Destrezas Basicas en Matematicas-6") during three academic years were used in the analysis relevant to the first objective. Log-linear models were used in the analysis of incorrect responses. The results of the analyses showed that for 100 of the 111 items on the test, males and females selected different incorrect options, and this pattern of responses was consistently found during the three years of test administration. However, for the vast

majority of the 100 items the number of subjects needed to obtain statistical significance was very large (Feliciano, 1986).

The responses of approximately 1,000 randomly selected students per academic year were analyzed in the comparison of male and female performance in problem solving. Females outperformed males in problem solving and in six of the seven computational variables. Males showed superiority in equivalence in all the three years, but statistical significance was obtained in only one of the years (Feliciano, 1986).

Analysis of covariance (ANCOVA) was used in the comparison of male and female performance in problem solving after controlling for computational skills. Seven analyses of covariance tests were conducted, one for each of the covariates. Estimated true scores for observed scores were used in the analyses. The results tend to show that for examinees with similar levels of computational skills, sex-related differences in problem solving performance do not exist. Females retained their superiority in problem solving when equivalence (in all three years) and subtraction (in one year) were the controlling variables.

The question of whether male-female differences in problem solving depend on computational skills was answered, partially, in the affirmative (Feliciano, 1986)

It has been documented that girls and boys in middle schools are very much different in their perception of school experiences. Hudgins' (1985) investigation dealt with whether middle school girls and boys perceive mathematics classrooms differently and have different classroom experiences, to examine the influence of teacher personality, style, and philosophy of teaching on the students' perception of the classroom environment, and to assess the teaching methods used in the presentation of mathematical material (Hudgins, 1985).

Four middle school mathematics teachers from public and private schools in Southeastern Pennsylvania were tape recorded, with five to ten class sessions recorded for each teacher. The taped segments totaling three and one half hours for each teacher were analyzed using the Robitaille Pupil Involvement Checklist (Hudgins, 1985).

The Classroom Environment Scale was completed by 253 students of these teachers, 127 girls and 126 boys, giving their assessment of the Relationship, Personal Development, System Maintenance, and System Change dimensions of the environment. The results of the Orleans-Hanna Algebra Prognosis Test were analyzed for each class by number of girls and boys passing school criteria for admission to Algebra in the eighth grade year (Hudgins, 1985).

Additional methodologies such as observation, the counting of interactions, item analysis of questionnaire

responses, and personal interview provided more complete information about the classrooms. The findings of the research indicated that middle school girls and boys perceive the mathematics classroom differently. Girls feel less teacher support and involvement in the classroom. Boys feel more competition and find the classes more innovative (Hudgins, 1985).

Schorr (1985) reports that the literature indicates that most secondary schools homogeneously group classes for instruction. As a result, minority students are often found in the lowest level classes and not in the highest level. There are unintended psychological and performance outcomes caused by the grouping system.

This dissertation presents for students of educational administration a simulation involving a study of the grouping practices in a middle school. Grades six through eight are grouped homogeneously into five ability levels, both for language arts and mathematics. The movement patterns of students through and across levels were identified and nine performance paths or directions of movement through the grades were traced. In order to establish an institutional pattern, two cohorts of students were studied (Schorr, 1985).

The variables were the student gender, race, California Achievement Test score as a national percentile for language arts and mathematics for grades five through eight, teacher marks in reading, writing, and social conduct for language

arts, marks in computation, problem solving and social conduct for mathematics, and the identity of the class and teacher in language arts and mathematics for grades six through eight.

Cohort 2 was analyzed in terms of the ethnic and gender composition of the paths for language arts and mathematics. Correlations were computed for each of the test variables and paths for the cohort and each ethnic group. Correlations between each mark and path were computed. The effect of teachers on movement was analyzed in terms of teachers' propensities to move students into higher or lower levels, or to hold them steady. Analyses of variance were computed to analyze the students who changed levels (Schorr, 1985).

The simulation requires the comparison of Cohort 1 with Cohort 2 at the end of the seventh grade. It asks the student to interpret statistics such as Pearson Correlations and displays such as Cross Tabulations and Scheffe Analyses of Variance. Substantive questions arising from the analyses are posed. Aspects of most probable solutions are presented (Schorr, 1985).

A final study attempted to determine whether the gender of the teacher and the student and the content area of the teacher influence teachers' perceptions of middle school students' reading abilities and scholarship. The influence of work and social habits was also investigated (Smit, 1984).

Data were collected, analyzed, and compared regarding middle school content-area teachers' perceptions of superior

readers and students' reading scores, and work and social habits of students perceived as superior, as well as of superior readers who were not perceived as superior students (Smit, 1984).

Major findings of the study were that it was not necessary for students to have standardized reading test scores in the superior range to be perceived as superior readers and good students by the teachers in this study. Work and social habits and student gender played an important role in teachers' perceptions of their students' reading and scholarship abilities. Girls were perceived by both male and female teachers as being better students and proved to be better students using grade point average as the criterion. However, male teachers identified proportionately more girls than boys as superior readers and good students than did female teachers. Teachers' gender and content area were not factors in the identification process. On the whole, teachers' predictions of students' reading abilities and scholarship proved to be accurate (Smit, 1984).

Students who attained reading scores in the superior range but were not identified as superior readers were rated significantly lower in listening, speaking, and reasoning abilities than students who did not attain superior reading scores but were perceived as superior. Middle school teachers considered listening and reasoning to be more important than reading as factors in being a good student (Smit, 1984).

Grade Level Performance

Grade levels may be a common and unique element which may impact achievement at the middle school level. A study to compare the academic achievement of eighth graders was conducted by Bryan (1987). The sample consisted of eighth grade students from the Mississinewa Community Schools in Gas City, Indiana. The scores of 420 students having a junior high school experience were compared to the scores of 762 students following the reorganization of the middle grades into a middle school (Bryan, 1987).

The Iowa Test of Basic Skills (ITBS), (Form 7), was used as a measure of academic achievement. The test results were compared based upon sex and ability group differences. The Cognitive Abilities Tests, (Form 3), were used to determine ability group. A two-by-two-by-three multivariate analysis of variance was used to statistically analyze the data.

Findings were: (1) A significant difference was found in favor of the middle school in the areas of vocabulary reading, spelling, mathematics concepts and mathematics problems; (2) both males and females attained higher academic achievement scores in the middle school setting than in the junior high school setting; (3) students in average, below average and above average ability groups attained higher academic achievement scores in the middle school setting than in the junior high school setting; (4) larger academic

achievement gains were made by students with greater ability levels (Bryan, 1987).

Goodman (1986) assessed the relative effectiveness of two methods of selecting mathematically gifted sixth grade students in the Ann Arbor school system for a seventh grade accelerated mathematics class: (1) an objective method based on test scores and (2) a subjective method based on sixth grade teacher observations.

Two sixth grade populations during the school years 1979-80 and 1980-81 are studied. Two measures are taken at the end of the sixth grade: (1) scores from a teacher-developed mathematics assessment test (MAT) which consists of a "computation test" (a 25 problem multiple-choice test of operations of rational numbers, geometric concepts and metric measurement) and a 12-problem open-ended word problem test; (2) recommendations by each student's sixth grade teacher regarding placement in a seventh grade accelerated mathematics course. At the end of the seventh grade, the observation is made of the presence or absence of a student's name on the eighth grade Algebra I course enrollment list (Goodman, 1986).

The diagnostic performance of the two methods of selection are evaluated with calculations of sensitivity, specificity, predictive value of a positive result, predictive value of a negative result, and efficiency. The results of this study indicate that the "computation test" scores are a better method of selection than the teacher recommendations

for two reasons: (1) they have the advantage of providing predictive values for a range of scores and (2) they reduce the chance of excluding meritorious students (Goodman, 1986).

A comparison of the learning styles of high and low mathematics achievement students to determine if significant differences exist between achievement groups in respect to environmental, emotional, sociological and physical learning style characteristics was examined by Calvano (1985). In addition, this study examined the learning styles of high and low achievement students to determine if significant differences exist which are attributable to students' grade level or gender. A final aim of this study was to determine whether developmental changes in learning style occur across grade levels for high or low mathematics achievement students. Differences in learning styles have implications for curriculum organization and planning (Calvano, 1985).

Data were gathered from 290 sixth, seventh, and eighth grade students enrolled in a public middle school during the 1984-85 school year. Each subject was administered the Learning Style Inventory. High (N = 112) and low (N = 66) mathematics achievement students were identified according to the SRA Achievement Series. Data for these students were analyzed employing one-way analysis of variance. The alpha level was .05 (Calvano, 1985).

The major finding of this study was that significant differences exist between the learning styles of high and low

mathematics achievement students at the middle school level. High achievement students show a stronger preference for responsibility, persistence, intake, and warmth during educational activities. Low achievement students prefer tactile learning experiences, teacher motivation, the presence of authority figures, and mobility while studying (Calvano, 1985).

High and low achievement students also differ significantly by grade level in their learning style preferences for persistence, intake, responsibility, teacher motivation, tactile learning experiences, temperature, and the presence of authority figures while studying. Furthermore, the two achievement groups differ by gender in their learning style preferences for light, tactile, kinesthetic, temperature, motivation, persistence, responsibility, noise, mobility and teacher motivation (Calvano, 1985).

Prescott's (1984) study measured and analyzed the responses of sixth, seventh and eighth grade students, teachers, and authors regarding statements related to selected middle school characteristics. The study was conducted in one midwestern urban district. The problems were:

1. Do the stated preferences toward the selected characteristics indicate differences, agreements, and/or significant relationships among the selected students, teachers, and authors?

2. Do the stated preferences of the selected students, teachers, and authors form general patterns that can form the basis for indicating the characteristics that should be considered for inclusion in a middle school program? (Prescott, 1984)

The student population sample was made up of heterogeneous classes selected from six elementary schools and the six junior high schools within the school district. Sixth, seventh, and eighth grade teachers were selected using a stratified random sampling method to insure that various teaching fields were represented. The middle school authors that participated in this study were selected on the basis of prolificness of current writing based on data supplied by the National Middle School Resource Center in Indianapolis, Indiana (Prescott, 1984).

The data were analyzed using frequency distributions and chi-square values. A chi-square was used to test relationships between the responses to the survey items and the respondent categories.

Among the major conclusions were the following:

1. The patterns of responses indicated by the three grade levels of students revealed more similarity than difference in that the data from only nine of 21 survey items showed a significant relationship.

2. In 19 of the 21 survey items, middle grade teachers and middle school authors held similar views concerning desirable middle school practices.

3. The responses preferred by students differed from the preferences indicated by authors and teachers more than they agreed (Prescott, 1984).

Vincent (1984) conducted a study to determine if significant differences existed between the reading achievement, mathematics achievement, and self-concept of sixth graders in a K-6 grade elementary school and sixth graders in a 6-8 grade middle school. A cause-and-effect relationship between school structure and sixth graders' academic performance and self-concept was explored to determine if justification could be found for reorganizing the traditional K-6, 7-9 school structures to incorporate a 6-8 middle school.

The Mountain View Elementary School District in the San Francisco Bay area of California was the site of the study. This district serves about 2,100 students with 40 percent minority. The sample included 197 of the 400 students sixth grade students enrolled during the 1980-81 and 1981-82 school years. Academic performance was measured using the 1973 Stanford Achievement Test (SAT), Intermediate Level II, reading and mathematics sections. Self-concept was measured by Gordon's "How I See Myself" scales (Vinson, 1984).

Scores from the SAT were submitted to a repeated-measures analysis of variance with the two factors of school organizational structure and gender as independent variables, and the pretest and posttest scores were used as the repeated measure. Scores from the "How I See Myself" scale were analyzed using an analysis of variance with two factors of school organizational structure and gender. In addition to the analyses of variances, Pearson product-moment correlations were computed between the SAT scores and the self-concept scores.

From the analysis of SAT scores, no differences were found between sixth graders in the two school structures. There was no advantage shown for either middle school or elementary school on either reading or mathematics performance. Also found from the analysis of variance of SAT scores was no difference between male and female students (Vinson, 1984).

The analysis of self-concept scores showed similar results. No advantage was shown for the middle school or elementary school structure on sixth graders' self-concept scores. Again, no differences were found between male and female students. The correlations between self-concept and academic performance were small and non-significant (Vinson, 1984).

Georgia Criterion Referenced Test (GCRT) Testing

Public outcry for accountability in education has promoted a new emphasis on criteria reference testing. The studies reviewing this section will relate specifically to the GCRT.

Bower (1987) investigated the effective school practices in Georgia middle schools. The purpose of this study was to determine what effective schools practice absence or presence may be used to classify Georgia middle schools as effective, achieving, or ineffective based on their residual scores from the eighth grade criterion referenced test regressed on free and reduced lunch participation percentages. Residual scores were used to control for socioeconomic level. There were 214 schools identified as middle schools. A return rate of 73 percent was achieved with 156 respondents to a mail out survey, the Inventory of School Operational Practices (ISOP).

The reliability of the ISOP was estimated at r = .82. A discriminant analysis correctly classified 87 percent of the effective schools and 90 percent of the ineffective schools. A Pearson r was used to determine the correlation between the effectiveness variables and the residual scores. Five of the 13 constructs were found to have correlations of .30 or higher: Discipline/Positive Learning Climate, High Expectations, Locus of Control, Collaboration, and Parent-Teacher Relations. All 13 constructs (Directed Instruction, Frequent Evaluations, High Academic Learning Time, High Rates

of Attendance, Discipline/Positive Learning Climate, Variety of Instructional Methods, Ample Resources, Locus of Control, Climate Supportive of Academic Achievement, High Expectations, Strong Leadership, Parent-Teacher Relations, and Collaboration) were found to be statistically significantly correlated with the achievement residual at the .01 level (Bower, 1987).

Thomas (1987) conducted a study to determine what factors, other than socioeconomic status may be related to an elementary school's performance in relation to their predicted achievement levels. Predicted achievement test scores were calculated for 1,032 schools based on free and reduced lunch percentages. Two hundred randomly selected schools were selected for further study using the Tenoschok Inventory of School Operational Practices questionnaire. A discriminate analysis correctly classified 68.9 percent of the effective and 63.8 percent of the ineffective schools. The t-test demonstrated significant differences on factor scores for 11 of the 13 factors between effective and ineffective schools. The 11 factors included Frequent Evaluations, High Academic Learning Time, Positive Learning Environment, Variety of Instructional Methods, Ample Resources, Locus of Control, Academic Climate, High Expectations, Strong Leadership, Parent-Teacher Relations, and Collaboration. A Pearson r was used to determine the correlation between the effectiveness variables and residual scores (the difference in the achieved

scores and the predicted scores). Eight of the 113 factors were then found to be statistically significant: Directed Instruction, High Rates of Attendance, Positive Learning Climate, Ample Resources, Locus of Control, Academic Climate, High Expectations, and Parent-Teacher Relations (Thomas, 1987).

Student achievement was measured by test scores on the 1986 Eight Grade GCRT (reading and mathematics combined) when Bedford (1987) did his study. The purpose of his study was to determine if there were correlations between student achievement and school climate and demographic variables considered individually and collectively. School climate variables were instructional leadership, environment, expectations for student achievement, monitoring of student progress, home-school relations, total. Demographic variables were size of school, socioeconomic status of students, race of students (white, minority), location of school (urban, suburban, rural), tenure of principal, sex of principal (Bedford, 1987).

Student achievement was measured by test scores on the 1986 Eighth Grade Georgia Criterion Referenced Test (reading, mathematics, combined). When Bedford studied school climate, variables were measured by the Connecticut School Effectiveness Questionnaire sent to five teachers in Georgia middle schools housing grades 4-8, 5-8, 6-8. Principals of

responding school supplied demographic information (Bedford, 1987).

There were statistically significant correlations (Pearson r) between all three subgroups of the GCRT and environment, home-school relations, size of school, socioeconomic status of students, and race of students. Reading was also statistically significantly correlated with expectations for student achievement and total school climate. Mathematics was also significantly correlated with instructional leadership (negative) and sex of principal. Combined, it was also significantly correlated with instructional leadership (negative) and expectations for student achievement (Bedford, 1987).

Home-school relations and instructional leadership had a statistically significant stepwise multiple regression correlation with reading, mathematics, and combined. When environment was added to the formula, there was a significant stepwise multiple regression correlation with mathematics. Stepwise multiple regression analysis found a statistically significant correlation between socioeconomic status and reading; between race, school size and mathematics; between socioeconomic status, race and combined (Bedford, 1987).

When school climate and demographic variables were combined, a statistically significant multiple correlation existed between socioeconomic status, home-school relations, race and reading; between race, home-school relations,

instructional leadership and mathematics; between socioeconomic status, race, home-school relations and combined; and between race; home-school relations, instructional leadership and combined (Bedford,1987).

The investigation of productivity as measured by reading and mathematics scores of school districts in Georgia employing the elective method of selecting a superintendent and districts employing the appointive method of selecting a superintendent was done by Adams (1985). The tests used were the GCRT in reading and mathematics for fourth and eighth graders and the Basic Skills Test (BST) for reading and mathematics for tenth graders. The study was divided into three stages. The first stage developed a production function or prediction equation of the productivity of Georgia school districts utilizing the predictor variables of racial composition, income per capita, district property wealth per pupil, percent of teachers with advanced degrees, total state and local expenditures per pupil, and percent of pupils receiving free and reduced priced lunches. Data were stratified according to geographical environment (urban and rural). Simultaneously multiple regression analysis was employed to establish prediction formulas (Adams, 1985).

The second state established the difference between the observed and predicted scores (residuals). Additional residual analysis was also conducted in the second stage of established validity. The third state employed a two-tailed

t-test to the residuals to examine the statistical significance of the difference between the productivity of districts using the appointive and elective methods of selecting the superintendent (Adams, 1985).

Percentage of students receiving free and reduced priced lunches and percentage of teachers with advanced degrees were the strongest overall predictors of the student test scores in the multiple regression analysis. The study concludes that there is no significant statistical difference in the productivity of districts with appointed superintendents and districts with elected superintendents in the total population. Two exceptions in the stratified data indicated appointed districts had higher mathematics productivity in the eighth grade rural population and the tenth grade urban population.

Intervention for Academic Gains

Various researchers have examined intervention in the area of affective education. In this literature review, intervention studies will relate to academic achievement. Foley (1986) investigated the effects of two levels of mapping training on the reading comprehension of seventh graders. The two levels were intensive-training-in-mapping and guided mapping. The intensively trained students practiced mapping until they could map independently. The guided mapping group mapped by filling in a teacher prepared guide. These

students' free and cued recall scores, both immediate and delayed, were compared to the scores of a third group of seventh graders whose study technique was to answer questions (Foley, 1986).

The subjects were 63 seventh grade students who were randomly assigned to one of the three treatment groups. Students' reading comprehension scores from the California Achievement Test (CAT) were used as a covariant. An English teacher trained students in the intensive-training-in-mapping group to create their own graphic presentation of the ideas in the reading selection. The guided mapping group received enough training in the study technique so that they could fill in a teacher-prepared map guide. All three groups read and studied a 2,000 word section of text on New Zealand for three class periods using the assigned study technique. On the following day, free and cued recall tests were administered and later scored by comparing student responses to a master protocol of idea units categorized as most, moderately, or least important. Data from these tests, given both immediately after studying the selection and two weeks later, were analyzed by an analysis of covariance with repeated measures (Foley, 1986).

The results showed that the intensively trained students remembered significantly more total idea units for immediate and delayed recall and for immediate free recall than did the students who mapped with a guide or answered questions ($p <$

.01). The facilitative effect of mapping independently appeared greatest for idea units rated as moderately important. Mapping with a guide resulted in scores which were not different from students who answered questions (Foley, 1986).

A study by Smith (1986) compared two methods of instruction--drill and a variety of instructional activities--for effectiveness in teaching place vocabulary. Twelve intact eighth grade social studies classes (N = 263), located in rural, small town, and urban settings, were randomly assigned to drill, variety, or control treatments. Students were tested, taught, retested, and given a delayed posttest. Students in the drill group recited the names and locations of 100 geographic places during each experimental session. Drill treatments were virtually identical from day to day. Students in the variety group performed a different activity during each treatment session (describing, categorizing, drawing, etc.). Each treatment session lasted for 25 minutes and was given twice weekly for four weeks. Test and teaching instruments were political, black and white outline maps of the world and the United States (Smith, 1986).

By inspection, the drill treatment produced achievement means larger than those produced either by the variety or control treatments. By inspection, effect sizes for the drill group were larger than those for the variety group or the control group. By inspection, means and effect sizes for the

variety group were larger than those for the control group. Analysis of covariance and Newman-Keuls aftertests indicated that the drill means were significantly larger ($p < .01$) than either the variety or control means. The variety treatment mean was significantly larger than the control mean (Smith, 1986).

This study indicated that drill instruction was more effective than variety instruction for teaching a geographic place vocabulary to eighth grade students. Variety instruction was more effective than no instruction (Smith, 1986).

Belton's (1985) study determined the effects of training students in the use of intonation strategies and read-along techniques as measured by pretests and posttests of comprehension on gist and sequencing. The major focus of the study was to determine the different effects of text with frequent exposures and simultaneous visual and oral presentation of text using read along techniques with intonation patterns transformed into the text (Belton, 1985).

Sixty sixth grade students from a low, middle-income middle school in a medium-sized city participated in one of the four treatment groups. Treatment group I received training composed of reading silently and answering gist and sequencing comprehension questions. Treatment II received training composed of visual and oral presentation of text with usual sentence print and were tested on gist and sequencing

comprehension. Treatment III received training composed of simultaneous visual and oral presentation of a transformed text with intonation patterns indicating pitch and stress; and comprehension questions on gist and sequencing comprehension. Treatment IV received training composed of simultaneous visual and oral presentation of a transformed text with intonation patterns indicating juncture, and comprehension questions on gist and sequencing comprehension. The results of the study showed that all four treatments benefitted from the training whether intonational or not (Belton, 1985).

In addition, Nederhood (1986) analyzed the effects of 34 teachers' use of Student Team Learning, a cooperative learning technique, on achievement and attitude outcomes of seventh grade students. Data were collected in 114 middle school classrooms from five schools and 1,145 students during the 1981-82 school year.

Five "experimental" teaching teams--one mathematics teacher, one language arts teacher, and one social studies teacher--were given the equivalent of two and one-half days of training in Student Team Learning techniques. Six "control" teacher teams were asked to continue their normal teaching patterns. All teachers used the same mathematics, language arts, and social studies materials (Nederhood, 1986).

Measures of effect include: CAT raw scores for the math, reading, language arts, and total batteries; student survey responses to 18 questions assessing the level of

student involvement in school, the level of student attachment to school, the number and strength of student friendships, and students' self-perceptions; student grades in mathematics and language arts; a follow-up survey of students of high-implementing teachers collected in the Spring of 1983. The levels of teacher implementation were established from six random observations of each teacher's classroom. Data were analyzed at the teacher level using t-tests and regression analyses. Unique to this study was the use of teacher implementation scores as a predictor variable in the regression analysis (Nederhood, 1986).

This study found significant, positive results linking a teacher's use of Student Team Learning with positive classroom involvement, increased numbers of friends, higher academic expectations, and increased self-confidence. No significant differences were found for academic achievement measures or for a measure of improved race relations (Nederhood, 1986).

A final study was done by Buckner (1984). His research study was designed to examine the relationship between class schedules that differ in the degree of academic/non-academic course variability and the academic achievement of 1,282 middle school learners. Study subjects were divided into two groups: those who followed class schedules with no more than two academic courses consecutively scheduled without an intervening non-academic course and those with three or more

consecutive academic classes. The study also examined the impact of the schedule types on the academic achievement of students by grade level and sex (Buckner, 1984).

For the dependent variable, academic achievement, total battery scale scores from the Comprehensive Test of Basic Skills (CTBS) were collected for all students. The total test scale score from the Test of Cognitive Skills was collected for each student as a measure of academic aptitude. Using the measure of academic aptitude as the covariate, an analysis of covariance was conducted to examine the relationships between the variables in the study. The analysis of the data revealed that based on the study population, there was no statistically significant difference in the academic achievement of students who followed class schedules with academic/non-academic course variability and those who followed limited variability schedules. In considering the impact of schedule type on academic achievement, the results were not significant for the total sample (PR > F = .6904), nor by grade level (PR > = .4263), nor by sex (PR > F = .6265). The study also revealed that female students' academic achievement scores were statistically higher than those of males. In the study population, the results were significant at the .0001 level. The academic achievement of eighth grade students included in the study was significantly higher than for their seventh grade counterparts. The results were significant at the .0346 level (Buckner, 1984).

In all comparisons between student groups who followed the two different schedule types, those with the more variable schedules achieved slightly higher mean CTBS total test battery scale scores. This proved to be the case for both sexes at each grade level. Even though the results were not statistically significant, on the basis of the consistency of the data, it was concluded that the variable schedule was slightly preferable to the limited variability schedule. The data also indicated that scheduling variability was slightly more important for eighth graders than for seventh graders (Buckner, 1984).

Other Related Middle School Studies

Assessment in the middle school has been a critical area of concern. Steele's (1987) multi-case study describes the methods of performance assessment used by selected middle school teachers when assessing students' understanding during writing instruction. Research on classroom assessment has tended to focus on standardized testing which leads educators to a narrow understanding of the classroom assessment environment. Recent interview and survey studies have shown that the most commonly and comfortably used methods of assessment involve teachers' observations and professional judgements (Dorr-Bremme, 1983; Stiggins & Bridgeford, 1984, 1985; Salmon-Cox, 1982). Because there are so few indepth observational studies on the methods of performance assessment

used in the classroom by middle school teachers, educators know little about the specific arts of performance assessment they use. This study identifies the methods of assessment used in these middle school classrooms and shows in what manner these identified assessments are used (Steele, 1987).

Another issue is the impact of good attendance on performance level in the middle school. Williams (1987) determined and analyzed the main types of absenteeism in two selected Florida middle schools, the characteristic responses of middle schools to those types, the intervention strategies utilized, how these intervention strategies were implemented, and the school site personnel's perceptions of effectiveness of the intervention strategies (Williams, 1987).

Two middle schools were selected for the study. These two intact cases (middle schools) met the criteria for site selection for analysis. Controlled variables in the framework of this study were school size, family income levels, geographic location and ethnic composition. The major findings of the study were: (1) a combination of intervention strategies was effective in improving middle school attendance; (2) principal leadership is a key factor in improving attendance and implementing the strategies; (3) an effective attendance policy for middle schools reflects clear policy, consistent enforcement, and immediate follow-up emphasized parent-student responsibility; and (4) the responses to the types of absenteeism included intervention

strategies and additional efforts made by schools. The two main types of absenteeism were directly attributed to the lack of student interest or motivation and lack of parental cooperation (Williams, 1987).

The intervention strategies identified were: (1) home visits, (2) parent-student-school conference; (3) school-home-contact; (4) student attendance materials sent home; (5) in-school suspension; (6) law enforcement agency and school joint efforts; (7) group counseling; (8) teacher recognition of behavior improvement; (9) alternative education program, and (10) juvenile court referral (Williams, 1987).

Another factor that relates to students' academic performance is the organizational structure of the middle schools. This was examined by Huse (1987). He determined what perceptions school committee persons, superintendents, and principals hold concerning often cited rationale and procedures that are followed while reorganizing grade structures in middle schools. A review of literature and related research encompassed a survey of features of the middle school, grade changes at the middle level, historical and theoretical background of grade change, and literature directed at the reorganization of school structures. Findings from this review confirmed the existence of critical rationale and procedures for reorganizing middle schools (Huse, 1987).

A survey instrument asked respondents to rate the appropriateness and importance of 50 rationale and procedural

statements for reorganizing grade structures. This instrument was distributed to school committee persons, superintendents, and principals from small, medium, and large New England school districts. Two major hypotheses were tested. The first hypothesis tested the statistical significance between the ratings of respondents by role and school district size. The second hypothesis tested the statistical significance of respondents on the individual survey items. A factor analysis was utilized to determine if there was clustering of survey items around specified areas of concern (Huse, 1987).

Respondents consistently rated the 50 rationale and procedural statements as appropriate and important considerations during reorganization of grade structures. The final sample of 149 provided an average rating of 2.36 by both role and size for each individual item on a 5.0 scale. The 2.36 rating indicated agreement with the scale. When rated by categories, political rationale and procedures were rated the highest, while financial rationale and procedures were rated the lowest (Huse, 1987).

Swiger (1987) designed a resource guide to assist in the implementation of middle school programs. A comprehensive review of the literature on middle schools was presented dealing with the historical development of the middle school concept and its supplanting of the junior high school. The review includes a rationale for middle schools' implementation in light of the physiological, cognitive and emotional needs

of the middle-school age child. Characteristics of exemplary middle schools are provided with special emphasis on interdisciplinary instruction, teacher characteristics, guidance and intramural activities (Swiger, 1987).

The methodology and results of a survey administered to all middle school principals in the state of Washington regarding current and desired middle school practices are discussed, along with a comparison of the data with national findings reported in 1985. Appropriate procedures for the transition to middle school programs are identified as an implementation model, and a case study of an effective and successful middle school transition is provided as an example (Swiger, 1987).

Summary of the Review of the Related Literature

Many studies purported that gender is an important variable that impact achievement. Feliciano (1986) and Huggins (1985) tried to investigate differences in females and males and how they perceived academic differently. Smith (1984) stated that gender played an important role in teachers' perceptions of their students' reading and scholarship abilities. Schorr (1984) used gender as a variable that impacted achievement.

The impact of grade level performance has been reflected in many studies. Bryan (1987) stated that academic achievement is higher for eighth grade students exposed to the

middle school curriculum. Goodman (1986) found that students who do well on tests in sixth grade will do well in grades seven and eight. According to Calvano (1985) and Prescott (1984), there are common and unique elements which are attributable to students' grade level. Vinson (1984) agreed that there are no differences found between male and female students.

Generally, the studies reviewed on the measurement of achievement is based on the performance on the GCRT. There is a relationship between performance on the GCRT and the effective school correlates, according to Bower (1987), Thomas (1987), Bedford (1987), and Adams (1985).

Intervention studies have proven that certain methods, materials, and strategies can improve students' academic performance (Foley, 1986; Smith, 1986; Nederhood, 1986; Buckner, 1985; & Belton, 1985).

Other related middle school studies indicate that assessment (Steele, 1987), attendance (Williams, 1987), organizational structure (Huse, 1987), resource guide and tentative model for middle schools by Swiger (1987) relate to students' performance in a significant way.

At the time of this review, there was limited to no research at all that related specifically to the impact of intervention strategies on students' performance in the middle school. The studies used in this study were reviewed during the time frame of 1984-1987. The reported studies utilizing

the GCRT as a measure of student achievement in the middle schools were limited. Lastly, no study reported was an exact replica of the studies intended by this researcher.

Contribution of this Study to the Field of Educational Leadership

The review of the literature indicates that continuous attention should be directed toward identifying intervention strategies that will improve academic performance. Emphasis should be focused on the needs of the students in middle school. With the advent of new demands for increased performance, more research is needed in the area of criterion referenced testing.

Although this research study design is a quasi-experimental study, it will augment existing theoretical information in the field. This study will provide specific information relative to intervention and GCRT testing in the middle schools. This study is expected to have direct implications for middle school teachers, administrators and students. Administrators should not hesitate to plan, implement and evaluate intervention strategies that will increase academic performance in the middle schools.

CHAPTER 3

THEORETICAL FRAMEWORK

This study was considered a quasi-two-group performance, interaction, and post-groups performance evaluation. The researcher was concerned about the poor performance of middle school students on the GCRT in the areas of reading and mathematics. First, the study investigated how each grade level performed on the GCRT. Second, the study looked at the effects the intervening variables (mathematics and reading identified core areas) had on the intervening group. And, finally, the researcher was concerned whether any difference exists between the two groups of students before and after intervention was used.

The researcher theorized the following: (1) The performance of students on the GCRT both in reading and mathematics were basically the same; (2) Once special attention was paid to any student either in reading or mathematics, the student would show improvement in overall performance; (3) Student performance on the GCRT was tied closely to what they have been exposed to in a true educational setting.

Now that this study is completed, the researcher hopes the results will be made available to key central office

administrators and building level administrators in hope of correcting the poor performance of students in all schools.

Definition of Variables

In an effort to allow the lay person as well as the educator to understand the key terms used in this study, definitions have been generalized. These terms were used in Chapters 4, 5, and 6 as well as in the assessment instruments in the Appendix. The definitions which follow provides clarity and brevity in the discussions.

Georgia Criterion-Referenced Tests (GCRT): The criterion-referenced tests measure mastery of state-identified objectives at selected grades. Results were reported for regular-program examinees in terms of student mastery and mean scale scores. The GCRT scale scores range from 100 to 300. The GCRT was administered statewide to students in grades six and eight.

Mathematics Intervention: The analysis of GCRT items for ranking and the development of activities based on assessed needs. Teaching to the results of the pre-assessment and the grouping of students in mathematics based on pre-assessment.

Reading Intervention: The analysis of GCRT items for ranking and the development of activities based on assessed needs. The development of strategies for improving vocabulary and the grouping of students in reading based on preassessment.

Grade Level Performance: The performance of a student at or above the standards established for that grade level. The indicators used to measure that performance was mastery of special minimum skills in reading and mathematics, and the completion of a specified level of the basal reader and GCRT performance.

Level of School: Grades housed in the school and the level name attached to the school. In the school system studied, schools with grades six, seven, and eight were called middle schools.

Student Achievement: Academic gains made by students as reported by progression and gains as indicated by standardized tests.

Sex Composition of the School: The number of students on the sixth and eighth grade levels that were male and the number of students that were female.

School Scores: The scores reported for the entire school by grade level and reported as a mean score for the institution.

System Scores: The scores reported for the entire school system by grade level and reported as a mean score for all students tested in the school system.

State Scores: The scores reported for all schools in the state and reported as mean scores for all students tested in the state.

Educational Planning District Scores (EPD): The scores reported for several school systems with similar characteristics and in close proximity geographically. The scores are reported as mean scores for all students tested in the district.

Relationship Among the Variables

The empirical research studies in the literature on student performance suggest that students placed in a structured learning environment, where special attention is given, tend to perform on a superior level to their opposite counterpart.

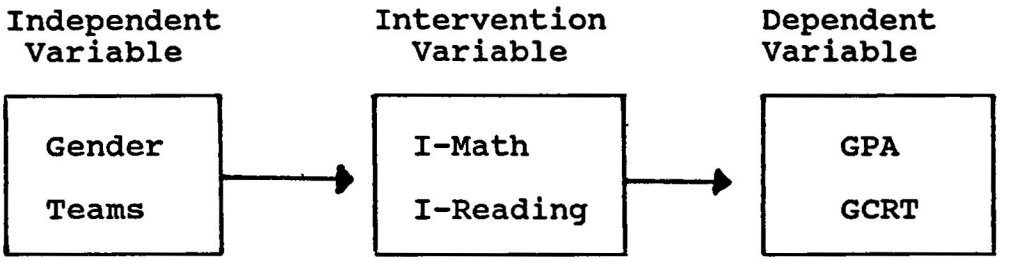


Figure 1. An Introduction of Subject Areas Intervention to One of the Two Groups at a Selected Inner City Middle School.

Null Hypotheses

The following null hypotheses were used to guide this study in determining if any differences exist between any combination of the groupings:

H_1: There is no significant difference between the female sixth grade and eighth grade experimental students' mathematics performance on the Georgia Criterion Reference Test at a selected middle school.

H_2: There is no significant difference between the male sixth grade and eighth grade control students' mathematics performance on the GCRT at a selected middle school.

H_3: There is no significant difference between the mathematics performance on the GCRT of eighth grade male students who have received intervention instruction and eighth grade male students who have not at a selected middle school.

H_4: There is no significant difference between the mathematics performance on the GCRT of eighth grade female students who have received intervention instruction and female students who have not at a selected middle school.

H_5: There is no significant difference between the mathematics performance on the GCRT of eighth grade male students who have received intervention instruction and female students who have not at a selected middle school.

H_6: There is no significant difference between the mathematics performance on the GCRT of eighth grade female students who have received intervention instruction and male students who have received intervention at a selected middle school.

H_7: There is no significant difference between the reading performance on the GCRT of sixth and eighth

grade experimental students at a selected middle school.

H_8: There is no significant difference between the reading performance on the GCRT of sixth and eighth grade control students at a selected middle school.

H_9: There is no significant difference between the reading performance on the GCRT of eighth grade experimental students and eighth grade control students at a selected middle school.

H_{10}: There is no significant difference between the reading performance on the GCRT of eighth grade male students who have received intervention instruction and eighth grade male students who have not at a selected middle school.

H_{11}: There is no significant difference between the reading performance on the GCRT of eighth grade female students who have received intervention instruction and eighth grade female students who have not at a selected middle school.

H_{12}: There is no significant difference between the reading performance on the GCRT of eighth grade

male students who have received intervention instruction and eighth grade female students who have not at a selected middle school.

The Intervention Method

Following the middle school curriculum as outlined by the State of Georgia, the GCRT was used to identify core areas where students' performance was poor. These core areas of weaknesses were addressed in a core curriculum objective manual. During the early part of the 1988-89 school year, a team, consisting of a group of teachers, a curriculum specialist, a principal, and a consultant developed performance-based learning objectives for reading and mathematics to augment the regular curriculum. Teachers were asked to spend ten to fifteen minutes of each class period working with students on the suggested enrichment activities. Because teachers were highly involved in the development of the enrichment activities and objectives, the program was well supported during the two-year implementation stage. The results of this intervention study are explained in Chapter 4.

Tracking of Sixth Grade Students

This study looked at the effectiveness of an intervention method used over a two-year period with sixth grade middle school students. The two groups selected for this study were similar in academics, socio-economics, size,

ethnicity, and location in a metropolitan school system. Based on the two groups' similar performances on the Georgia Criterion Reference Test, one group was administered an intervention method in both reading and mathematics and the other continued to receive traditional instruction.

The intervention instruments were developed by a team composed of the principal, curriculum specialist, media specialist, learning community leaders, and consultants from local universities. The intervention instrument focused attention on those areas in both reading and mathematics that the students performed poorly. During the early part of the 1988-89 school year, the GCRT assessment instrument was administered to all middle school sixth grade students to determine their readiness for grade level in reading and mathematics. The same group of students as eighth graders in 1990-91 were administered the GCRT to determine their grade level readiness. This study addressed the issue of whether or not the intervention method allowed students in the intervention group to perform better than their counterparts in the non-intervention group.

Limitations of the Study

The findings may or may not be generalized to other schools in or outside the system. It must be noted that the t-test utilized is a statistical tool that measures differences between means. The tool utilized might not have

measured the true performance of the groups being studied. Lastly, all findings should only be generalized to the school being studied and the limitation of controlling other relevant factors unknown to the researcher.

Type of Study and Research Design

This study looked at the difference among means in the subject areas of reading and mathematics for two groups of students. One of the groups was administered an intervention in reading and mathematics and the other group received traditional instructions. The focus was on the effect of the intervention methods over a two-year period on sixth grade students. The GCRT was administered to both groups, as sixth graders in early 1988-89 and again as eighth graders in 1990-91 to assess readiness for grade levels. The study looked at the gains made by sixth graders over a two-year period by selected demographic factors. It was a quasi-experimental study that relied on data collected over a period of time in semi-controlled environments.

Description of the Setting

The selected middle school was located in a low income to low middle income community. Students were bused from surrounding neighborhoods and communities to the school. Typical of an inner city school, most students were from single family, female headed households. The external

influences of the community had a stronger influence on the students than the school. That is why the study researched the input of the intervening variable on capturing the students' attention and interest to perform better in the areas of reading and mathematics. More than 90 percent of the school was made up of African American students. On the average, the school ranked above the system average on the GCRT but below the state average.

The Population and Data Collection Procedures

The population was made up of students at a selected inner-city middle school who attended the same school over the two-year period that the research covered. The middle school was selected for this study because of its poor academic and demographic factors. Students who were not at the school during the time period as sixth graders were eliminated from the study. Table 1 shows the demographics of the population studied.

The Georgia Criterion Reference Test was used as the data collection instrument. The results of the students' performance on this instrument were confidential and were handled in such a manner by the researcher. Individual students were not identified as well as the identity of the schools under study. Only students who were sixth graders and two years later were eighth graders were included in the study. Information used in this study was obtained from the

Table 1

Demographics of the Study Population

School Year 1988-89

Middle School	Population	Study Population	Sex M	Sex F
Intervention	290	147	72	75
No Intervention	533	143	70	73
Totals	823	290	142	148

Research and Evaluation Division of this inner city middle school system. Once the data were collected, the researcher made sure that the information lent itself to data analysis.

Statistical Analysis of the Data

This study represented a two group, two grade levels, two test GCRT factors. The t-Test was utilized to determine differences between paring of the means as outlined by the research questions and null hypotheses. The .05 level was the benchmark factor for determining significance. Sample statistics were presented to give a profile of the school and two groups under study. The t-Test of independence was sufficiently sophisticated to deal with the maturation factor of this population.

Summary

This chapter provided the theoretical and conceptual framework upon which this study was based. The variables, the proposed differences among variables, research design, setting, institution and statistical analysis were presented.

CHAPTER 4

DATA ANALYSIS AND PRESENTATION

This chapter looks at the data analysis of the sixth and eighth graders' mathematics and reading performance of a selected inner-city middle school that had 34 percent of its students scoring above the national norm in reading and 42 percent in mathematics on the Iowa Test of Basic Skills (ITBS) in 1988-89. On the same test, the same group of students scored 39 percent in reading and 42 percent in mathematics on the ITBS in 1990-91. The school years in question were 1988-89 and 1990-91 (see Table 2). Only 1990-91 eighth graders who started as 1988-89 sixth graders at the school were included in the study.

Table 2

Profile of Students' Performance as sixth and eighth Graders on the ITBS

Year	Enrollment	Tested	Percent Above National Norm	
			Mathematics	Reading
1988-89 (sixth)	290	264	42	34
1990-91 (eighth)	273	248	42	40

During the two-year period, the school experienced a drop in student enrollment of 17 students, and 16 students were not tested. The mathematics performance of the students remained the same, an increase of six percentage points was achieved in reading.

Table 3 gives a breakdown of group performance as sixth and eighth garders for the school, system, EPD and state.

Table 3

Comparison of Group Performance Level as Sixth and Eighth Graders on the GCRT by School, System, EPD and State

Group Performance Level	1988/89		1990/91	
	Mathematics	Reading	Mathematics	Reading
	6th Grade		8th Grade	
Middle School	200	201	211	208
System	205	206	205	202
EPD	212	214	216	212
State	210	212	214	210

Table 4 gives a breakdown of the same group of students' performance in mathematics and reading by male and female on the GCRT. The actual number of students involved in the study represent a total of 176 participants.

Table 4

Sixth Grade and Eighth Grade Students' Performance on the GCRT

Group	MALE N	MALE Mathematics	MALE Reading	FEMALE N	FEMALE Mathematics	FEMALE Reading
Sixth Grade EXPERIMENTAL	43	202	205	57	204	208
Eighth Grade EXPERIMENTAL	43	216	214	57	220	218
Sixth Grade CONTROL	28	195	196	48	200	200
Eighth Grade CONTROL	28	210	203	48	212	209
Totals	71	213*	209*	105	214*	214*

Note: * Totals represent the averages for mathematics and reading on the GCRT only for those students involved in the study.

A comparison of the mean scores for the intervention group and the control group for both sixth and eighth graders revealed that gains were made. None of the gains exceeded 20 points, and the smallest gain was 7 points for the control group in reading.

It should be noted that the selected middle school eighth graders had a reading average of 208. The system, EPD, and state averages were 202, 212, and 210, respectively. The school, on an average, performed six points above the system and performed below that of EPD and the state. In mathematics, a similar trend was noted: selected school, 211; system, 205; EPD, 216; and state, 214. Although the school

performed better than the system in reading and mathematics, the averages are still too low when compared to EPD and state averages.

To see if any of the gains were significant or not based on the intervention method, comparisons were made as indicated by the following twelve hypotheses. Each hypothesis will be evaluated statistically using the t-test of independence at the .05 level of significance.

Null Hypotheses

H_1: There is no significant difference between the female sixth grade and eighth grade experimental students' mathematics performance on the Georgia Criterion Reference Test at a selected middle school.

Table 5

Mathematics Performance of Female GCRT Sixth and Eighth Grade Students on the GCRT

Experimental Groups	N	$\overline{X}$	df	t	P
Sixth Graders	57	204	55	12.241	.000
Eighth Graders	57	220			

In the experimental group, a total of 57 female students' mathematics scores were looked at as sixth graders and eighth graders. Following the intervention, a gain of 16 points were noted. At the five percent level of significance, this is highly significant. Thus, we can safely state that the performance of the students over the two-year period showed that the females benefitted from the intervention and we must reject the hypothesis.

H_2: There is no significant difference between the male sixth grade and eighth grade control students' mathematics performance on the GCRT at a selected middle school.

Table 6

Mathematics Performance of Male Sixth and Eighth Grade Students on the GCRT

Control Groups	N	$\bar{X}$	df	t	P
Sixth Graders	28	195	26	5.738	.000
Eighth Graders	28	210			

Responding to hypothesis two and looking at Table 6, one notices a similar trend for the male control students as that of the female experimental students. In the control group, a

total of 28 male students' mathematics scores were looked at as sixth graders and eighth graders. A gain of 15 points was made. At the five percent level of significance, this is highly significant. Thus, we can safely state that the performance of the students over the two-year period showed that the males had a significant gain, and we must reject the hypothesis.

H_3: There is no significant difference between the mathematics performance on the GCRT of eighth grade male students who have received intervention instruction and male students who have not at a selected middle school.

A comparison between male students who have received the intervention treatment and those who did not shows that from a mean's point of view the experimental group did better (see Table 7).

Table 7

Male Eighth Grader Students' Mathematics Performance on the GCRT

Group	N	$\bar{X}$	df	t	P
Experimental	43	216	69	.315	.7284
Control	28	210			

However, from a statistical point of view, the six points that separated the two means are not significant at the .05 level. This means that we must accept the hypothesis that there is no difference between the performance of the two groups. The difference can be attributed to a chance happening and will not be a consistent occurrence.

H_4: There is no significant difference between the mathematics performance on the GCRT of eighth grade female students who have received intervention instruction and female students who have not at a selected middle school.

A comparison between female students who received the intervention treatment and those who did not shows that from a mean's point of view the experimental group did better (see Table 8).

Table 8

Female Eighth Grader Students' Mathematics Performance on the GCRT

Group	N	$\overline{X}$	df	t	P
Experimental	57	220	103	.375	.7096
Control	48	212			

However, from a statistical point of view, the eight points that separate the two means are not significant at the .05 level. This means that we must accept the hypothesis that there is no difference between the performances of the two groups. The difference can be attributed to a chance happening and will not be a consistent occurrence.

H_5: There is no significant difference between the mathematics performance on the GCRT of eighth grade male students who have received intervention instruction and female students who have not at a selected middle school.

When looking at the data in Table 9, one can notice that the male experimental students' average is higher than that of the female control group.

Table 9

Comparison of Eighth Grade Experimental Male and Control Female Mathematics Performance on the GCRT

Group	N	$\bar{X}$	df	t	P
Experimental Male	43	216	89	-.781	.4393
Control Female	48	212			

Although the male group mathematics score is four points higher than that of the females who did not receive treatment,

we notice that the t-value is a -.781; and it is not significant. Therefore, we must accept the null hypothesis. An inverse relationship exists that indicates some other factors at work.

H_6: There is no significant difference between the mathematics performance on the GCRT of eighth grade female students who have received intervention instruction and male students who have received intervention at a selected middle school.

When both sexes were looked at after the intervention treatment had been administered, it is evident that the female students performed better than the male students, 220 and 216, respectively (see Table 10).

Table 10

Comparison of Eighth Grade Male and Female Students' Mathematics Performance on the GCRT

Group	N	$\bar{X}$	df	t	P
Female	57	220	98	-.852	.3990
Male	43	216			

The four points that separate the female performance from the male performance is not significant at the .05 level. Thus, we must accept the hypothesis that there is no difference between

the female students and the male students from a statistical point of view.

H_7: There is no significant difference between the reading performance on the GCRT of sixth and eighth grade experimental students at a selected middle school.

As expected, the experimental group reading performance showed an increase from a mean of 198 to a mean of 206. Table 11 shows that as a combined group, the 100 students did show improvement in their reading performance.

Table 11

Experimental Sixth and Eighth Grade Students' Reading Performance on the GCRT

Grade	N	$\bar{X}$	df	t	P
Sixth	100	198	98	3.072	.0039
Eighth	100	206			

This eight-point increase for the sixth graders as eighth graders who were part of the experimental group is significant at the .05 level. Therefore, the null hypothesis that states that there is no difference between the two groups reading performance is rejected.

H_8: There is no significant difference between the reading performance on the GCRT of sixth and eighth grade control students at a selected middle school.

A total of 76 students made up the control group. As sixth graders, they had an average reading score of 207; as eighth graders, they had a score of 216 (see Table 12).

Table 12

Comparison of Sixth and Eighth Grade Control Students' Reading Performance on the GCRT

Grade	N	$\bar{X}$	df	t	P
Sixth	76	207	74	1.178	.2502
Eighth	76	216			

The eighth grader students who did not receive intervention treatment showed a gain score of 216 in reading. This nine-point gain between means show a t-value of 1.178 and is not significant at the .05 level. Therefore, we must accept the null hypothesis as stated.

H_9: There is no significant difference between the reading performance on the GCRT of eighth grade experimental students and eighth grade control students at a selected middle school.

Table 13 shows that the performance of the experimental group is better than the performance of the control group in reading. The population consisted of 176 students with 100 belonging to the experimental group and 76 belonging to the control group.

Table 13

Comparison of Eighth Grade
Students' Reading Performance on the GCRT

Group	N	$\bar{X}$	df	t	P
Experimental	100	216	174	3.776	.0009
Control	76	206			

The experimental group mean of 216 and the control group mean of 206 for reading represent a 10-point difference and is highly significant at the .05 level. Therefore, hypothesis nine, which states that there is no difference between the two groups, is rejected. The difference is more than a chance happening.

H_{10}: There is no significant difference between the reading performance on the GCRT of eighth grade male students who have received intervention instruction and eighth grade male students who have not at a selected middle school.

There was a difference between the reading means of eighth grade male students who have received intervention instruction and eighth grade male students who did not receive intervention instruction, but the means are not significant statistically (see Table 14).

Table 14

Comparison of Male Eighth Grade Students' Reading Performance on the GCRT

Group	N	$\overline{X}$	df	t	P
Experimental	43	214	69	-1.153	.2595
Control	28	203			

The 11-point advantage held by the experimental group has a t value of -1.153 and is not significant. Therefore, we must accept the null hypothesis that states that there is no difference between the two groups. The inverse t-value indicates other factors involved besides the intervention treatment.

H_{11}: There is no significant difference between the reading performance on the GCRT of eighth grade female students who have received intervention instruction and eighth grade female students who have not at a selected middle school.

The reading performance of eighth grade students who received intervention instruction and those who did not is not significant at the .05 level. The experimental group's nine-point advantage, from a statistical point of view, was a chance happening (see Table 15).

Table 15

Comparison of Female Eighth Grade Students' Reading Performance on the GCRT

Group	N	$\bar{X}$	df	t	P
Experimental	57	218	103	.659	.513
Control	48	209			

The t-value of .659 for the experimental group mean of 218 and the control group mean of 209 with a degree of freedom of 103 has a probability of .513, which is larger than five percent. We must, therefore, accept the null hypothesis that there is no difference between the two groups.

H_{12}: There is no significant difference between the reading performance on the GCRT of eighth grade male students who have received intervention instruction and eighth grade female students who have not at a selected middle school.

Looking at the intervention factor between males and females, we notice that the females reading mean score is larger than that of the males reading score (see Table 16).

Table 16

Comparison of eighth Grade Experimental Male and Female Students' Reading Performance on the GCRT

Sex	N	$\bar{X}$	df	t	P
Male	43	214	98	1.624	.1121
Female	57	218			

Table 16 shows that the females' reading score of 218 is four points larger than the males' reading score. This difference is not large enough to be of great concern. From a statistical point of view, there is no significant difference between the performance of the males and the females. Any difference seen is considered a chance happening. Thus, we must accept the null hypothesis as stated.

Summary

This chapter provided descriptive statistic of the selected school population performance on the GCRT. In both mathematics and reading, the school averages were better than the school system but were below those of EPD and the state. The twelve hypotheses looked at the mathematics and reading performances of sixth and eighth grade students by sex. In

all comparisons between the experimental group and the control group, the experimental group had a larger average score. Eight of the hypotheses were found to be not significant and four were found to be significant.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATION

In conclusion, it must be pointed out that although the selected school performance on the GCRT in the areas of reading and mathematics was higher than the school system's, it was lower than that of EPD and the state. The selected middle school eighth grade students had a reading average of 208. The system, EPD, and state averages were 202, 212, and 210, respectively. The school, on an average, performed six point above the system, and performed below that of EPD and the state. In mathematics, a similar trend follows: selected school, 211; system, 205; EPD, 216; and state, 214. Although the school performed better than the system in reading and mathematics, the averages are still too low when compared to EPD and state averages (see Table 17).

Table 17

Comparison of Eighth Grade Students' Performance on the GCRT by School, System, EPD, and State

Group Performance Levels	1990 - 1991 Mathematics	Reading
Middle School	211	208
System	205	202
EPD	216	212
State	214	210

A trend presented itself in Table 17. That is, for the group performance levels compared, all the mathematics means are higher than the reading means. Thus, it is safe to say that the data indicated that eighth graders, as a group, performed better in mathematics than reading.

An analysis of the 12 hypotheses making various comparisons within and between the sixth and eighth graders led to 8 hypotheses being accepted and 4 hypotheses being rejected. The hypotheses accepted and rejected are presented in Table 18.

Table 18

Accepted and Rejected Null Hypotheses

Hypotheses	Accepted	Rejected
1. Mathematics Female sixth & eighth	-	R
2. Mathematics Male sixth & eighth	-	R
3. Male eighth Treatment/Control	A	-
4. Female eighth Treatment/Control	A	-
5. Male/Female Treatment/Control	A	-
6. Female/Male Treatment/Control	A	-
7. Reading sixth & eighth Treatment	-	R
8. Reading sixth & eighth Control	A	-
9. Reading eighth Treatment/Control	-	R
10. Reading Male eighth Treatment/Control	A	-
11. Reading Female eighth Treatment/Control	A	-
12. Male/Female eighth Treatment/Control	A	-

In both mathematics and reading, all comparisons made with the treatment groups showed that their mean scores were higher. However, further analysis revealed that the

differences found among these comparisons were not statistically significant.

Gains were found in all comparisons between the sixth graders and eighth graders in both the intervention method group and the control group. In the four hypotheses that were rejected because the gains were significant, the comparisons were made within groups and not between sexes.

Based on the findings, it is safe to say that the data support the assumption that the use of an intervention method to reinforce basic skills is no more effective than traditional instruction. However, the researcher is careful in endorsing such an assumption, because too many variables come into play in educating a youngster. The strength and/or weakness of the intervention method and its administration might not be what the envisioners thought it might be.

The intervention method proved to be no more effective than the traditional instruction. Studying the performances of the sixth and eighth graders over a two-year period might be too short a period to really measure the effect of the treatment. Likewise, the gains in scores can possibly be caused by the maturation of the students. Generalization across the population should be carefully made, because the population of students as sixth graders and as eighth graders saw a smaller number of students still at the same school.

The inner city nature of the school impacted on the researcher not being able to track the same number of sixth

graders as eighth graders. Thus, the researcher had to rely on matching the eighth grade students' scores with their sixth grade scores, only if they were at the same school over the two-year period.

Recommendations

The study's findings lead to the following recommendations in hopes that central office administrators and building level administrators may be guided in addressing educational concerns of a similar nature.

1. Although the school's performance in mathematics and reading was better than the system's, it was still below that of EPD and the state. Continued implementation of other methods should be used to raise the school averages.
2. Four findings indicated that the intervention method was effective within comparisons. This sign of encouragement should be carefully studied to see if the same effect can occur for all students.
3. The effectiveness of the intervention method should be evaluated based on a smaller group of students to validate it as a possible intervention to be used systemwide.
4. Teachers as well as caring community leaders should be involved in the design of the intervention model.

5. Intense training of teachers should be provided for the quality implementation of the intervention method to all students.
6. Policies should be written governing how the intervention method should be implemented with guidelines spelled out for both teachers and students.
7. The intervention methods utilized was no more effective than traditional instruction and should be re-evaluated before its continued implementation.
8. The study should be replicated using a similar population makeup, and should involve students from the suburbs or rural areas instead of inner city youth.
9. Gains shown between sixth and eighth grade students in both mathematics and reading were evident for intervention method comparisons with the control group, and shows the possibility of further need to relook at the intervention method for further refinement prior to total adoption.
10. The study looked at student performance in reading and mathematics and not other educational core areas. The effects of the intervention method should be analyzed for usefulness across other core areas.

The recommendations previously made should serve as a guide for strong consideration for continued implementation of the present intervention method. Based on the findings, it is recommended that the intervention method be re-evaluated and

revised, if needed, to address the poor performance of the students on the GCRT. It should be a goal of the central office and building level administrators to strongly commit to raising school GCRT averages above the state and EPD averages.

In closing, this study shows that the intervention method had limited impact on the academic performance of the students on the GCRT. This is a good sign. The school should share this information with all the teachers in appreciation of their outstanding job with the students. Likewise, the school system should be proud that something has been done by a building level administrator to try to raise students' academic performance.

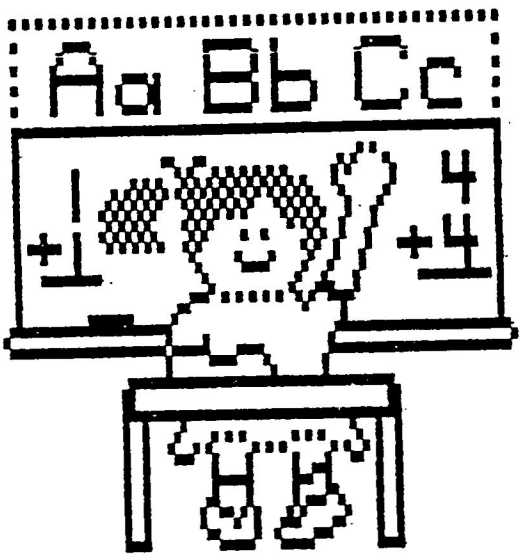
The implication of this study lends itself to the findings which suggest that the intervention model was not significant. Although this is true statistically, it is not true from an observational point of view. The small gain indicates that further development of the intervention model should be undertaken by the school system.

Though small, the impact and effort have been made to correct the downward slide of the academic performance of the selected inner city school. This is encouraging and should be looked at with hope. Something being done is better than nothing being done to solicit continued quality academic performance by all students.

APPENDIX

Appendix A

GCRT
MATH PRETEST
GRADE SIX



INNER-CITY
MIDDLE
SCHOOL

GCRT MATH PRETEST

GRADE 6 DEVELOPED BY:

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BERNICE T. SCOTT

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JACQUELYN STEPHENS

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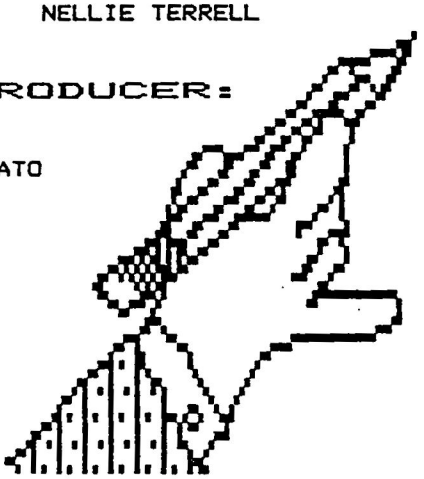


GCRT MATH PRETEST: GRADE 6

Directions to Pupils

Each question in this GCRT Pretest is followed by four suggested answers. Read each item carefully and decide which one of the four suggested answers is best. Find the item on your answer sheet which has the same number as the answer you have chosen. If you wish to change an answer, be sure to erase all of your first mark. You may use scratch paper. Do not make any marks on the pretest. Mark only one answer for each question.

1. Which is the same as 6%?

   1) 6.00 2) .60 3) .06 4) .006

2. Which of these figures contains a circle?

   (1) pyramid
   (2) cylinder
   (3) cube
   (4) rectangle

3. Which units would you use to measure carpeting for your bedroom?

   (1) length, width
   (2) years, days
   (3) grams, kilograms
   (4) seconds, hours

   T=total number of marbles
   c=number of children
   m=number of marbles for each child

   Use the formula T=c x m.

4. There were 4 children and a total of 20 marbles. Each child had the same number of marbles. How many marbles did each child have?

   1) 5 2) 16 3) 24 4) 80

5. Which is the same as 3/4?

   (1) 20%
   (2) 34%
   (3) 45%
   (4) 75%

6. If an animal is a dog, then it has four legs. Pete has four legs. If these statements are true, which is also true?

   1) Pete is not an animal.
   2) Pete is a dog.
   3) Pete could be a dog.
   4) Pete is a German Shepherd.

7. 2 1/2 X 1 2/3= 1) 4 1/6 2) 4 2/6 3) 2 1/3 4) 2 3/5

8. Which unit is used to measure butter?

   (1) gallons
   (2) pints
   (3) pounds
   (4) inches

9. Segment A is about 1 cm long. How long is segment B?

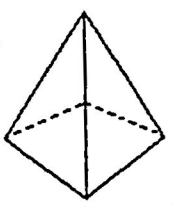
   A —— B ——+——

   1) 100 cm 2) 15 cm 3) 3 cm 4) 9 cm

10. Which is the same as 5 1/4?

    1) 51/4 2) 21/4 3) 22/4 4) 5/4

11. The figure to the right is called a



    1. cone
    2. pyramid
    3. sphere
    4. cylinder

12. How many of these boxes ☐ will fit into this ☐ box?

    1) 3 2) 4 3) 5 4) 10

13. Round to the nearest whole number. Estimate the answer.

    5.36
    +2.75

    1) 10.00 2) 6.00 3) 8.00 4) 7.00

14. Which belongs in the ☐ ?

    (3x2)X4=3X(2x☐) 1) 2 2) 3 3) 4 4) 6

15. The date May 5, 1987 is a measure of the

(1) hour, second, and year
(2) yard, day, and month
(3) month, day, and year
(4) week, year, and hour

16. My favorite T.V. program comes on at 8:30. One night a ball game delayed it for 1 hour and 15 minutes. What time did the program start?

1) 7:15 2) 9:45 3) 9:30 4) 9:15

17. Jimmy is an egg packer. He has 72 eggs to pack in 12 cartons. If he packs the same number of eggs in each carton, how many eggs will be packed in each?

1) 72 + 12 2) 72 - 12 3) 72 x 12 4) 72 ÷ 12

18. 89 + 17= 1) 916 2) 428 3) 106 4) 121

19. Which unit is used to measure how long it takes to walk five blocks?

(1) minute
(2) day
(3) week
(4) year

20. $\begin{array}{r} 1.2 \\ \underline{\times 2.3} \end{array}$ 1) 2.76 2) 27.6 3) 6.0 4) .60

21. Which is a factor of 36?

(1) 7
(2) 8
(3) 9
(4) 10

22. In a bag of marbles there are (5) purple, (3) orange, (4) red, and (6) black marbles. If someone takes a marble from the bag without looking, what color will it <u>most</u> likely be?

(1) purple
(2) orange
(3) red
(4) black

23. 25% of 100 is 1) 4 2) 50 3) 25 4) 75

Match each problem below with the correct example:

24. Dear Sam,
Today I found 15 spiders. I'll give three of them to you when I get home.

Your friend,
Bruce

How many spiders will Bruce keep?

1) $15 \div 3$ 2) $15 + 3$ 3) 15×3 4) $15 - 3$

25. Dear Emily,
We went hiking today and 3 kids got poison ivy. The other fifteen of us just got blisters.

See you soon,
Laurie

How many campers went on the hike?

1) $15 \div 3$ 2) $15 + 3$ 3) 15×3 4) $15 - 3$

26. Dear Willy,
Today was my turn to cook. I made Campfire Nuggets for 15 people. Everyone ate 3.

Yours truly,
Ned

How many Nuggets were eaten?

1) $15 \div 3$ 2) $15 + 3$ 3) 15×3 4) $15 - 3$

27. Dear Carol,
I've collected 15 different beetles. I'll split them with you and Ellie when I get home.

Your sister,
Mimi

How many beetles will each girl get?

1) $15 \div 3$ 2) $15 + 3$ 3) 15×3 d4 $15 - 3$

28. $1/2 \div 2/3 =$ 1) 2/2 2) 4/2 3) 3/4 4) 2/4

29. Which unit is used to measure the volume of a bottle of Coca-Cola?

1) liter 2) kilogram 3) centimeter 4) millimeter

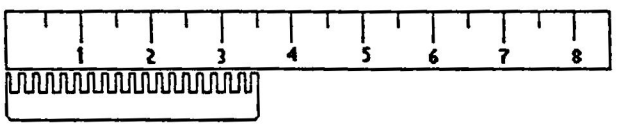
30. Which unit is used to measure longer distances?

(1) millimeters
(2) centimeters
(3) grams
(4) kilometers

31. Sam is helping his mother put up new wall paper in the kitchen. What units will they use?

(1) feet, yards
(2) months, days
(3) hours, minutes
(4) cups, pints

32. 2639 ÷ 13= 1) 23 2) 213 3) 223 4) 203



33. Which is the length of the above comb?

1) 2 1/2 inches
2) 3 inches
3) 3 1/2 inches
4) 4 inches

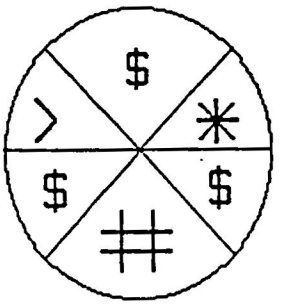
34. Which is greater than 5/6?

(1) 1/3
(2) 3/4
(3) 12/15
(4) 7/8

35. 2/3 X 3/4= 1) 3/3 2) 2/4 3) 3/12 4) 1/2

36. A group of 44 students went to Calloway Gardens. They wanted to rent enough wagons for each person to go on a hayride. Each wagon will hold only 8 people. How many wagons will they need to rent?

1) 132 2) 52 3) 6 4) 5



37. If you spin the spinner above, on which figure will the spinner most likely stop?

1) $
2) #
3) *
4) >

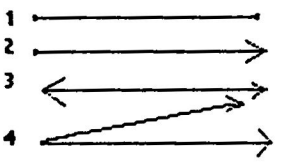
38. Which represents 68 billion, 145 thousand, 16?

(1) 68,145,160
(2) 6,814,516
(3) 68,000,145,016
(4) 68,145,016

39. What is the difference of 8 and 4?

1) 2 2) 4 3) 12 4) 32

40. Which represents an angle?



41. Which unit of measurement should be used to weigh a dime?

(1) kilogram
(2) kilometer
(3) meter
(4) gram

42. 45 X 40= 1) 1605 2) 1800 3) 1600 4) 1640

43. Daisy invited 18 people to a party. The guests included 4 cousins, 2 aunts, 10 friends and 2 uncles. What is the probability of a friend arriving first?

1) 4/18 or 2/9 2) 10/18 or 5/9 3) 2/18 or 1/9 4) 0

N= number of children
b= number of boys
g= number of girls

Use the formula N= b+g.

44. There are 14 girls in the class and 30 children altogether. How many boys are in the class?

1) 12 2) 16 3) 14 4) 15

45. Each letter from the word ENGINEER is written on a card. The cards are mixed, and you pick some cards without looking. What letters are least likely to be picked?

1) N,E
2) G,I,R
3) R,E,I
4) I,N,E

46. Which could <u>not</u> have a measure of ninety-seven pounds four ounces?

(1) the weight of a boy
(2) the temperature of water
(3) a package you need to send
(4) a large box of books

47.
$$\begin{array}{r} 707 \\ \underline{-179} \end{array}$$

1) 886 2) 538 3) 672 4) 528

48. Which is four and two hundred sixty-three thousandths?

(1) 4.263
(2) 4263.0
(3) 4.20063
(4) .4263

49. Which could be the area of your classroom?

(1) 144 kilograms
(2) 144 cubic feet
(3) 144 square meters
(4) 144 meters

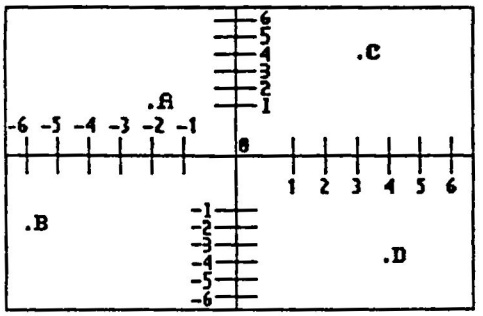
50. Jackie went to sleep at 9:30 p.m. and woke up at 7:00 a.m. How many hours did Jackie sleep?

1) 9 2) 9 1/2 3) 10 4) 10 1/2

51. Which is a multiple of 6?

1) 2 2) 3 3) 10 4) 12

Use the diagram below to answer the following questions:



52. Which describes the location of point "D"?

1) (-4,4)
2) (4,-4)
3) (4,4)
4) (-4,-4)

53. Which letter names the ordered pair (-6,-2)?

1) D
2) C
3) B
4) A

54. Which is the ordered pair for the directions: to the right 5, then down 1?

1) (-5,-1)
2) (-1,-5)
3) (1,5)
4) (5,-1)

55. Which is the ordered pair for the directions: to the right 1, then up 1?

1) (-1,-1)
2) (1,1)
3) (0,0)
4) (-1,0)

56. Which is the ordered pair for the letter "C"?

1) (-4,3)
2) (-3,-4)
3) (3,4)
4) (3,3)

57. In Joan's math class, 3/5 of the students are girls. What percent of the class are girls?

1) 35% 2) 53% 3) 16% 4) 60%

58. There are 8 glasses on the shelf. Two of them have a chip on the rim. If you pick a glass without looking, what is the probability that you will get 1 that is chipped?

(1) 4/8 or 1/2
(2) 2/8 or 1/4
(3) 3/8
(4) 1/8

59. The area of a box top is 72 cm^2 . Choose the correct dimensions.

(1) 7cm by 3cm
(2) 9cm by 8cm
(3) 6cm by 8cm
(4) 10cm by 7cm

60. Which is the same as 7X(3+5)?

(1) (7X3)+5
(2) (7X3)+(7X5)
(3) (7+3)X(7+5)
(4) (3X5)+7

61. There are 50 problems on a test. Sandy got a score of 90. How many did she get correct?

1) 48 2) 40 3) 45 4) 35

62. Which is 25% of 4?

1) .25 2) 4.00 3) 1.00 4) .16

63. 500 - 275= 1) 375 2) 225 3) 775 4) 235

64. Which is equal to 6X15?

(1) (6+10)x(6+5)
(2) (6+5)X(10+5)
(3) (6x10)+(5x10)
(4) (6x10)+(6x5)

65. 3 2/5
-1/2
1) 2 9/10 2) 3 2/5 3) 3 1/10 4) 2 2/10

66. Herb wants to paint a chair he found in the attic. Find the information he needs to know before making his plans.

1) There is a suitcase in the attic.
2) The chair does not have arm rests.
3) Paint will cost $3.85.
4) His brother is reading a book.

67. 415
X23
1) 2075 2) 435 3) 1245 4) 9545

68. Estimate the difference: 55.7 - 35.9

1) 17 2) 18 3) 19 4) 20

69. Four classes at Halo Middle School have a total of 40,17,28 and 20 students. Which shows how to find the average number of students per class?

1) $(40+17+28+20) \times 4$

2) $\frac{40+17+28+20}{4}$

3) $(40+17+28+20) - 4$

4) $(40+17+28+20) + 4$

Read the following information to answer the item below:

The highway commission studied traffic on an interstate highway. Study this chart.

Trucks Passed While Driving

	NUMBER OF HOURS DRIVEN			
	1	2	3	4
80	4	9	14	18
75	3	4	12	14
70	2	5	8	10
65	1	3	5	6

70. If you drive at a rate of 75km per hour for 3 hours, about how many trucks would you pass?

1) 14 2) 12 3) 7 4) 8

71. Which is the best estimate for the length of a football field?

1) 2mm 2) 300m 3) 4L 4) 300cm

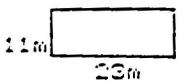
72. 67.5 - 13.9= 1) 55.5 2) 53.5 3) 57.9 4) 53.6

73. Popcorn is \$.45 a box. Ernest buys 7 boxes. How much change should he receive from \$5.00?

1) (\$.45+7) x \$5.00 2) (\$.45x7) . \$5.00
3) \$5.00 - (\$.45x7) 4) (\$.45+7) - \$5.00

74. 6.15 + 91.135= 1) 97.135 2) 99.15 3) 97.285 4) 97.15

75. Use A = l x w. Estimate the area of this rectangle in square meters.



1) 45m 2) 48m 3) 200m 4) 435m

76. Natasha packs peaches 18 to a crate. If she has 100 peaches and 5 crates, how many peaches are left after she has filled the crates?

1) 100 - (5x18)
2) 100 - (5+18)
3) (100x5) ÷ 18
4) (100+5) ÷ 18

Mark emptied his Halloween Trick or Treat bag and found the following treats in it. Use the chart to answer the next 2 questions.

Apples	3
Gum	5
Candy	12
Popcorn	2

77. If Mark had a friend hand him something out of his bag, what would be his chances of getting a piece of candy?

1) 12 out of 20
2) 12 out of 22
3) 5 out of 22
4) 5 out of 20

78. What would be his chances of getting an apple?

1) 12 out of 20
2) 2 out of 22
3) 5 out of 20
4) 3 out of 22

79. Estimate the quotient: 321 ÷ 48

1) 300 ÷ 40 2) 300 ÷ 50 3) 400 ÷ 40 4) 400 ÷ 50

80. Janice rode the bus from Valdosta to Atlanta. What unit is used to measure her distance?

(1) days
(2) inches
(3) yards
(4) miles

81. It was 2 F when Juan left for school and 20 F when he returned from school. How many degrees warmer was it when Juan returned from school?

1) 18 2) 20 3) 22 4) 40

82.

MARBLES	
Red	8
Green	6
Blue	4
Gold	2

Which color marble is most likely to be picked if Sara draws one from a bag without looking?

(1) red
(2) green
(3) blue
(4) gold

83. To represent 75% as a decimal, you would write:

1) 7.5 2) .75 3) 5.7 4) 7500

84. Name the shape represented at the right.

1. cylinder
2. square
3. cone
4. sphere

85. Estimate the product: 225 X 61

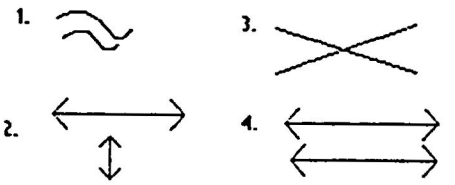
1) 12900 2) 12000 3) 12880 4) 13806

86. What is the mass of five apples?

(1) 240ml
(2) 500g
(3) 18kg
(4) 2L

87. $5\overline{)9.5}$ 1) 19 2) 1.9 3) .19 4) 190

88. Which pair of lines are intersecting?



89. $\begin{array}{r} 9.8 \\ +2.7 \\ \hline \end{array}$ 1) 20.5 2) 125 3) 12.5 4) .125

90. Mia's piggy bank has 5 one-dollar bills, 3 quarters, 8 dimes, 10 nickels, and 9 pennies in it. How much money is this?

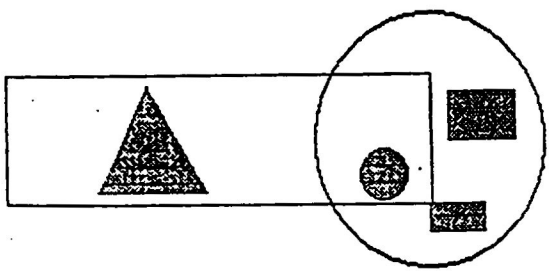
1) $7.14 2) $5.38 3) $20.19 4) 6.39

91. Which is a prime number?

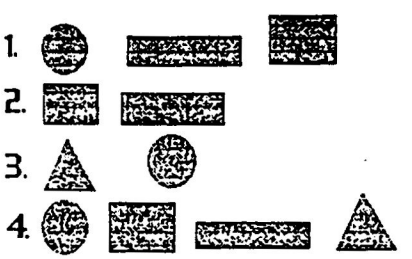
(1) 4
(2) 5
(3) 9
(4) 15

92. What is the correct unit of measurement for the area of a rug?

(1) square feet
(2) meters
(3) inches
(4) kilometers



93. In the drawing above, which figures are inside the circle but outside the rectangle?



94. 2/3 + 1/2= 1) 1 1/2 2) 1 1/3 3) 1 7/6 4) 1 1/6

PICTOGRAPH OF FAVORITE FOODS

HOT DOGS 

PIZZA 

HAMBURGER 

CHICKEN 

FISH 

KEY: Each  represents 2 students

95. From which of the four charts was the pictograph made?

(1) FAVORITE FOODS

Hot Dogs	IIII IIII
Pizza	IIII IIII IIII
Hamburger	IIII IIII
Chicken	IIII IIII IIII III
Fish	IIII III

(2) FAVORITE FOODS

Hot Dogs	IIII IIII
Pizza	IIII IIII IIII
Hamburger	IIII
Chicken	IIII IIII
Fish	IIII III

(3) FAVORITE FOODS

Hot Dogs	IIII IIII
Pizza	IIII II
Hamburger	IIII IIII
Chicken	IIII IIII
Fish	IIII

(4) FAVORITE FOODS

Hot Dogs	IIII
Pizza	IIII
Hamburger	IIII
Chicken	IIII
Fish	II

96. A flight to New York left Los Angeles at 1:00am. The flying time was 6 hours and 25 minutes. At what time did the plane arrive in New York?

1) 5:05am
2) 7:25am
3) 4:24pm
4) 6:25pm

97. 169 +219 1) 383 2) 378 3) 388 4) 3718

98. 6 1/2 ÷ 1 1/4= 1) 6 1/8 2) 5 1/5 3) 10 1/4 4) 6 1/8

99. 63 2/3 +36 1/3 1) 99 2/3 2) 98 1/3 3) 100 4) 101

100. A baseball is a

(1) circle 2) sphere 3) cone 4) cylinder

101. $.3\overline{).27}$ 1) ..9 2) .09 3) 9 4) 90

102. Which unit is used to measure water in a bucket?

(1) inches
(2) pounds
(3) feet
(4) gallons

103. $8\overline{)4,653}$ 1) 558R7 2) 515R7 3) 518R5 4) 581R5

104. Sue heard on the news that the temperature is 30 degrees C. This is measured in

(1) centimeters
(2) Celsius
(3) kilograms
(4) millimeters

105. How many ounces are in 1 1/2 pounds?

1) 8 2) 12 3) 16 4) 24

106. Which number belongs in the ☐ ?

1	3
3	9
4	12
5	☐

(1) 13
(2) 14
(3) 15
(4) 16

107. There are 3 green, 7 red, and 2 yellow marbles in a jar. If you choose a marble without looking, what is the probability of getting a purple marble?

(1) 3/12 or 1/4
(2) 2/12 or 1/6
(3) 0
(4) 7/12

108. What is equal to 2 gallons?

1) 2 quarts
2) 4 quarts
3) 6 quarts
4) 8 quarts

109. Carol is making an outfit. She needs 2 yards, 2 feet of material for the jacket and 2 feet for the scarf. What is the total amount of material needed?

1) 8 feet 2) 10 feet 3) 6 feet 4) 14 feet

110. Which is the same as a gallon?

(1) 4 quarts
(2) 4 pints
(3) 4 feet
(4) 4 pounds

111. Angela has 1 quart of milk. Her cake recipe calls for the milk to measured in cups. How many cups of milk does she have?

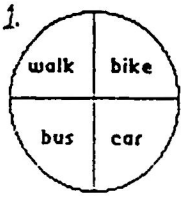
1) 3 2) 6 3) 4 4) 2

112. Which is the best estimate for the distance from Chicago to Miami?

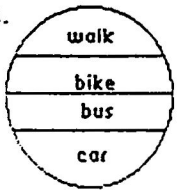
1) 2221km 2) 240L 3) 2221m 4) 20mm

113. A survey of sixth grade students showed how they got to school. It was found that 45% walk, 15% ride bikes, 35% ride the bus, and 5% ride in a car. Which graph correctly shows these data?

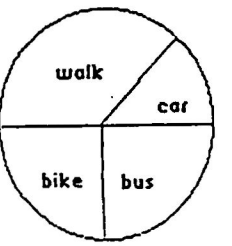
1.



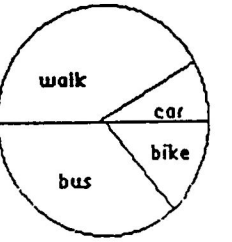
2.



3.



4.



114. 87.4 X 4 1) 34.8 2) 3.48 3) .348 4) 348

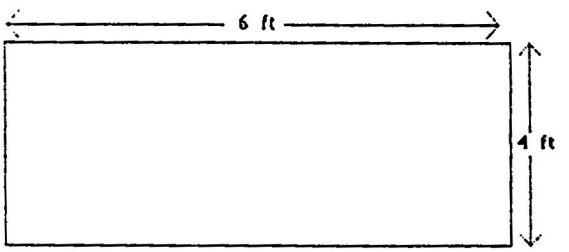
Use the table to solve the problem below.

WEATHER FACTS, JULY 19

CITIES	TEMP.	WIND(mph)	RAINFALL(in.)
DALLAS	98 F	15	1.00
MIAMI	93 F	30	1.25
NEW YORK	91 f	5	0

115. How much more rain fell in Miami on July 19 than in Dallas?

1) 0.75in. 2) 0.25in. 3) 1.25in. 4) 0.5in.



116. Which is the area of the above rectangle?

1) 10 sq. ft.
2) 16 sq. ft.
3) 20 sq. ft.
4) 24 sq. ft.

117. John had a block with 3 red sides, 1 blue side, and 2 white sides. If John tosses the block into the air, what is the probability that it will land red side up?

(1) 1/6
(2) 1/3
(3) 2/3
(4) 1/2

118. Which unit would you use for the area of your basketball court?

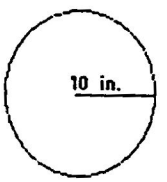
(1) centimeters
(2) square meters
(3) kilograms
(4) millimeters

119. Which is the most likely measurement for the mass of a carrot?

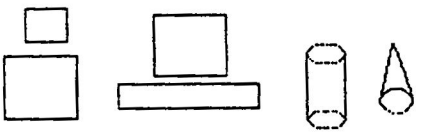
1) 200kg 2) 100cm 3) 100g 4) 200mm

120. The circle below has a radius of 10 inches. All points a distance of 8 inches from the center of the circle are

1. outside the circle.
2. at the center of the circle.
3. inside the circle.
4. on the circle.



121. How many squares are represented below?



(1) 6

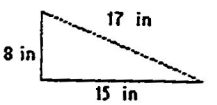
(2) 3

(3) 2

(4) 1

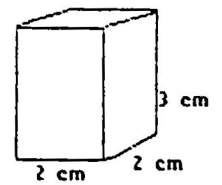
122. Temperature is measured in

(1) seconds
(2) feet
(3) degrees
(4) weeks



123. What is the perimeter of the above triangle?

1) 38 inches
2) 136 inches
3) 120 inches
4) 40 inches



124. Which is the volume of the above figure?

1) $8cm^3$ 2) $12cm^3$ 3) $16cm^3$ 4) $48cm^3$

125. Carol worked 2 1/2 hours on Monday and 5 1/2 hours on Tuesday. If she makes $3.00 an hour, how much money did she make for the two days?

1) $16.50 2) $75.00 3) $60.00 4) $24.00

126. What is the sum of 8 and 4?

1) 2 2) 4 3) 12 4) 32

127. Which is the more likely measurement for the thickness of a dime?

1) 240km 2) 65mm 3) 1mm 4) 1cm

128. 66.6 + 3.3 + .4 1) .703 2) 139.6 3) 70.3 4) 99.4

129. All 6th grade students take math. Antonio takes math. Which of the following is true?

1) Antonio could be a 6th grade student.
2) Antonio could not be a 6th grade student.
3) Antonio must be a boy.
4) Antonio must be a girl.

PICTOGRAPH OF FAVORITE SPORTS

BASEBALL 

BASKETBALL 

FOOTBALL 

SOCCER 

KEY: Each  represents 2 students

130. From which of the four charts was the pictograph made?

(1) FAVORITE SPORTS

Baseball	1111 1
Basketball	1111 1111
Football	11
Soccer	1

(2) FAVORITE SPORTS

Baseball	1111 1
Basketball	1111 1111
Football	1111
Soccer	11

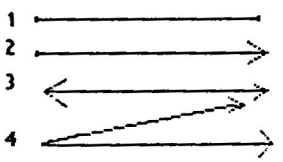
(3) FAVORITE SPORTS

Baseball	1111 1
Basketball	1111
Football	1111
Soccer	1

(4) FAVORITE SPORTS

Baseball	111
Basketball	1111
Football	11
Soccer	1

131. Which represents a ray?



132. You plan to giftwrap a package your sister will give to a friend. Which question would you not need to answer?

1) What color paper should you use?
2) How much paper will you need?
3) What is in the box?
4) Where is the wrapping paper?

133. Which number sentences are related?

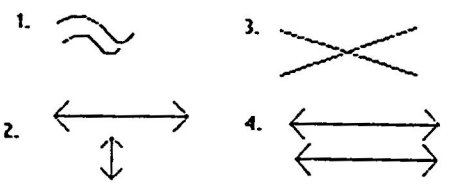
(1) 3x5=15
15-3=5

(2) 4+1=5
5+4=9

(3) 4x5=20
20x4=80

(4) 10-1=9
9x1=9

134. Which represents parallel lines?



135. Which is the same as 4/5?

(1) .45
(2) .56
(3) .80
(4) .95

136. Which is the same as 12/20?

(1) 2/3
(2) 4/9
(3) 3/5
(4) 1/2

137. 

Which part of the drawing is shaded?

(1) 1/6
(2) 5/6
(3) 6/5
(4) 2/3

138. Which is greater than .75?

(1) .075
(2) .6
(3) .8
(4) .089

Wonderland Books *** Inventory Control Book Sales: Week of January 6						
Type	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Travel	8	2	15	6	4	7
Health	12	50	35	48	22	61
Mystery	16	23	28	15	26	37
History	6	3	0	10	12	8

Use the chart above to answer the questions below.

139. What was the mean number of travel books sold?

1) 24 2) 7 3) 42 4) 78

140. What was the total number of books sold on Wednesday?

1) 42 2) 49 3) 24 4) 78

141. Which is the same as 9/100?

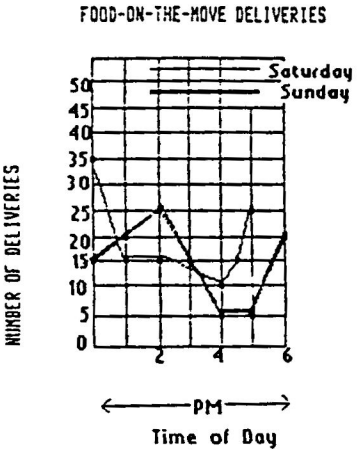
(1) .9
(2) .09
(3) .90
(4) .9100

142. Which represents two thousand, fifty-nine?

(1) 259
(2) 2,059
(3) 2,590
(4) 2,000,059

143. Which is the same as 25%?

(1) 2/5
(2) 1/4
(3) 3/4
(4) 5/7



Use the graph above to answer the questions below.

144. What was the total number of deliveries made on Saturday from 12 to 2pm?

1) 35 2) 45 3) 65 4) 50

145. What was the mean number of deliveries made in an hour on Sunday?

1) 15 2) 19 3) 5 4) 7

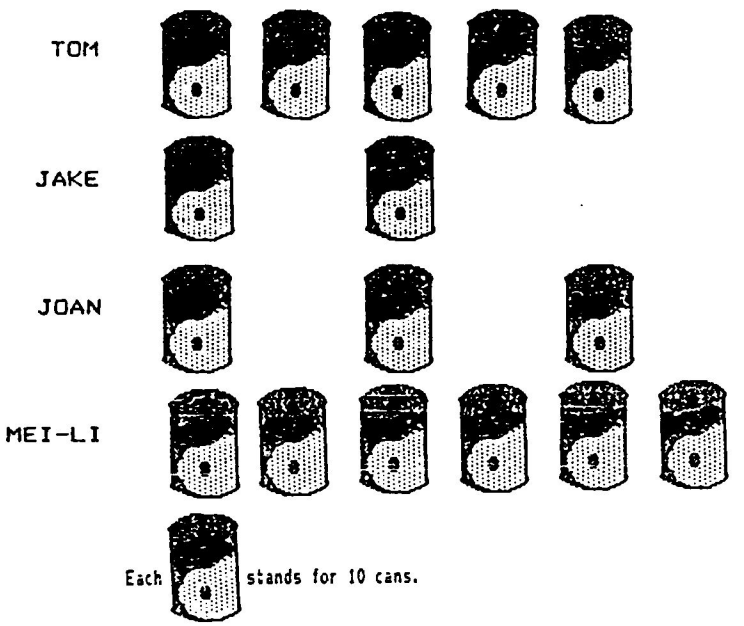
146. John has 3 quarters, 4 dimes, 2 nickels and 8 pennies. Which is the correct amount of money?

(1) $ .96
(2) $ .17
(3) $1.33
(4) $2.65

147. Steve planted 2 1/4 dozen tomato plants. Only 1 2/3 dozen plants survived. Which question would most likely be asked?

1) How many dozen corn plants did Steve plant?
2) How many dozen plants did not survive?
3) How many cucumber plants survived?
4) How many bean plants survived?

Cans Collected for Recycling

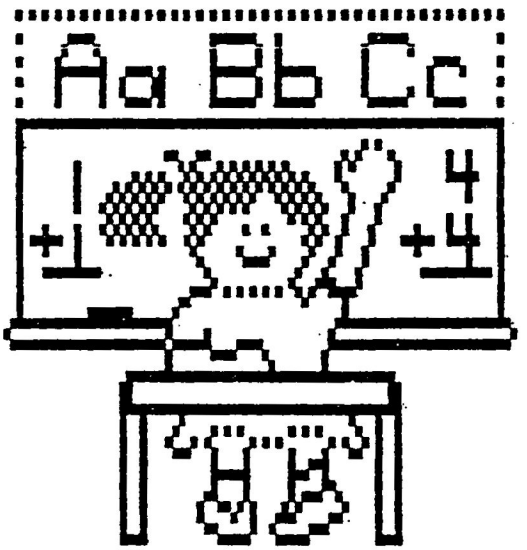


148. How many cans did Mei-li collect?

1) 10 2) 30 3) 50 4) 60

Appendix B

GCRT
MATH PRETEST
GRADE EIGHT



INNER-CITY
MIDDLE
SCHOOL

GCRT MATH PRETEST

GRADE 6 DEVELOPED BY:

DELORES H. DAVID

BERNICE T. SCOTT

SHIRLEY HILL

JACQUELYN STEPHENS

JOANNE M. PHARR

JOYCE TEAL

GRADE 8 DEVELOPED BY:

GLORIA JONES

JAMES LAMAR

LUCILE REDD

SHIRLEY REID

OTHER CONTENT AREA PARTICIPANTS:

WILLIAM DRAKE

DeCARLO DULING

EURRIE LINDSEY

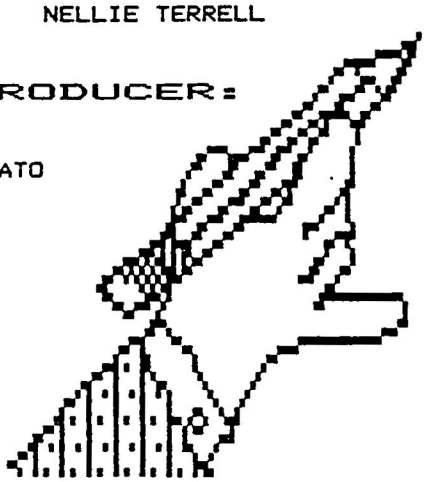
BETTYE LYNUM

RUDEAN RIGGINS

NELLIE TERRELL

EXECUTIVE PRODUCER:

EMMA A. CATO



GCRT MATH PRETEST: GRADE 8

Directions to Pupils

Each question in this GCRT Pretest is followed by four suggested answers. Read each item carefully and decide which one of the four suggested answers is best. Find the item on your answer sheet which has the same number as the answer you have chosen. If you wish to change an answer, be sure to erase all of your first mark. You may use scratch paper. Do not make any marks on the pretest. Mark only one answer for each question.

OBJECTIVE 1

1. Which is another name for 4%?

   1) .004 2) .40 3) 4.0 4) .04

2. Which describes the order of fractions from least to greatest?

   1) 1/2, 1/3, 1/4
   2) 1/3, 1/2, 1/4
   3) 1/4, 1/2, 1/3
   4) 1/4, 1/3, 1/2

3. 5/8 + 5/8= 1) 10/8 2) 1 1/4 3) 1 2/8 4) 1

4. The most sensible measure for the height of a door is

   1) .27m 2) 2.7m 3) 27m 4) 270m

5. 17.3 - 6.89= 1) 1.041 2) 10.41 3) 5.82 4) 51.6

6. What number is 60% of 95?

   1) 57 2) 78 3) 65 4) 84

7. 1.07 x .8= 1) 8.56 2) .856 3) 8.15 4) 1.306

8. July 12 is a measure of

   1) length
   2) days and months
   3) miles and feet
   4) volume

9. A bag of marbles contains 5 green, 6 yellow, 4 red, and 3 black marbles. If someone takes a marble from the bag without looking, what color will it most likely be?

   1) green 2) yellow 3) red 4) black

10. $^{+}8 - {}^{-}2 =$ 1) -6 2) $^{+}6$ 3) $^{+}10$ 4) -10

11. $\begin{array}{r} 609 \\ \underline{-78} \end{array}$ 1) 531 2) 631 3) 541 4) 571

12. 2/4 is the same as

    1) .50 2) .20 3) .30 4) .10

13. $1\ 5/7 \times 2\ 5/8 =$ 1) 9/2 2) 4 1/2 3) 2 25/56 4) 252/56

14. $63\overline{)9072}$ 1) 1404 2) 128 3) 144 4) 432

15. $2.73 \div 42 =$ 1) 65 2) .065 3) .65 4) 6.50

16. Jerry wants to measure his weight. One way for him to do this is to use

    1) Celsius 2) meter 3) kilogram 4) liter

17. $5.6 - 3 =$ 1) 2.6 2) .26 3) 8.6 4) .86

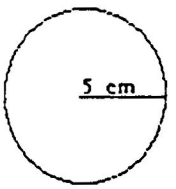
18. 40% of what number is 200?

    1) 5000 2) 750 3) 500 4) 1500

19. $^{+}8 \times {}^{-}6 =$ 1) -14 2) $^{+}48$ 3) -48 4) $^{+}14$

20. $15\ 7/9 - 10\ 2/3 =$ 1) 5 1/9 2) 1/9 3) 25 1/9 4) 5

21. Find the area. Use 3.14 for π.

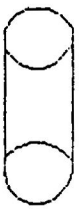


1) 78.5cm² 2) 785cm² 3) 314cm² 4) 31.4cm²

22. Which is the same as .65?

1) 6.5% 2) 65% 3) .065% 4) 650%

23. The figure below is called a



1) Cone 2) Sphere 3) Pyramid 4) Cylinder

24. Which of these units should be used to measure the temperature of boiling water?

1) inches 2) feet 3) yard 4) Fahrenheit

25. Adult tickets to 6-Flags cost $7.50. Student tickets cost $5.25. How much will 3 adult tickets and 5 student tickets cost altogether?

1) $22.50 2) $26.25 3) $48.25 4) $48.75

26. 7ft3in
-5ft6in 1) 12ft9in 2) 2ft7in 3) 1ft9in 4) 12ft7in

27. [(2,6) (3,9) (4,12)]

If (N, ☐) belongs to the relation above, then ☐ is

1) N + 2 2) N + 4 3) N X 3 4) N X 2

28. 405 - 89= 1) 216 2) 116 3) 316 4) 214

29. Frances has a bag of candy. It contains 4 lollipops, 8 chocolate bars, 2 packages of gum, and 5 peanut bars. If someone takes a piece of candy from the bag without looking, the piece of candy will most likely be a

1) lollipop 2) chocolate bar 3) pack of gum 4) peanut bar

30. Frances will not look in the bag. If she reaches into the bag, what are the chances she will get a package of gum?

1) 4 in 19 2) 8 in 19 3) 2 in 19 4) 5 in 19

31. Frances will not look in the bag. If she reaches into the bag, what are the chances she will <u>not</u> get a package of gum?

1) 2 in 19 2) 17 in 19 3) 5 in 19 4) 0 in 19

32. 4003
<u>-396</u> 1) 3607 2) 3393 3) 4399 4) 4096

33. Which unit of measurement would best describe the length of a bathtub?

1) 2km 2) 2m 3) 2cm 4) 2mm

34. Which of these units should <u>not</u> be used to measure the area of a garden?

1) cup 2) feet 3) inches 4) yards

35. 17 3/4 + 9 2/5= 1) 1 3/20 2) 26 5/9 3) 27 3/20 4) 23/20

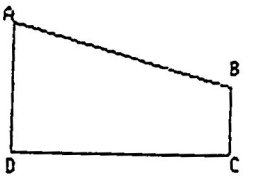
36. 461
<u>+803</u> 1) 1264 2) 442 3) 1204 4) 1162

37. 9.07 + 3.9= 1) 12.97 2) 129.7 3) 12.9 4) 1.297

38. 7.809 + 63.07= 1) 70.87 2) .70879 3) 70.879 4) 14.116

39. Which line segments are perpendicular?

1) AB and BC
2) AB and DC
3) AD and BC
4) AD and DC



40. The best answer choice for the length of a gym is

1) 6m 2) 60m 3) 600m 4) 6000m

41. Which contains a circle?

1) Prism 2) Cone 3) Cube 4) Pyramid

42. 61.9 x .18= 1) 5.471 2) 54.71 3) 11.142 4) 111.42

43. Which is true for all numbers N?

1) N+0=0 2) Nx0=N 3) Nx1=1 4) N÷1=N

44.
905
230
59
+19

1) 1203 2) 1213 3) 1113 4) 1013

45. −16 ÷ −8= 1) +2 2) −2 3) −3 4) +3

46. 23 2/9 − 7 8/9= 1) 15 3/9 2) 16 6/9 3) 15 1/3 4) 1/3

47. At Vine School, 550 students take math. 95% of these students take science, also. Which number sentence will give the number of students taking both math and science? Select the appropriate operation.

1) 550+95 2) 550..95 3) (550+95)x.01 4) 550x.95

48. 5)8yd6ft 1) 1yd7ft 2) 1yd1ft 3) 2yd 4) 3yd

49. 1/3 + 1/6= 1) 1 1/2 2) 2/6 3) 1/2 4) 3/63

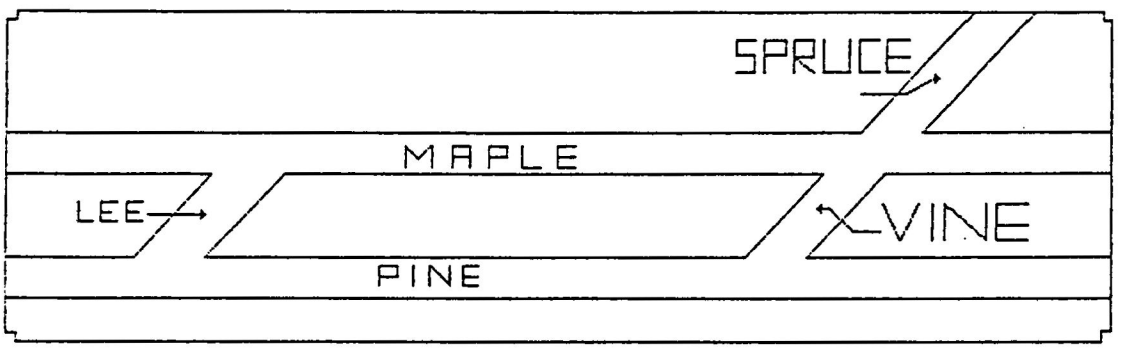
50. 6.073 x 9.93= 1) 6030.489 2) 60.30489 3) 1185.33 4) 1.18533

51. If 3/5 of the band members play woodwind instruments, what percent of the band plays woodwind instruments?

1) 35% 2) 53% 3) 60% 4) 30%

52. What percent of 120 is 75?

1) 75% 2) 62.5% 3) 12% 4) 7.5%



53. On the map above, which street appears to be parallel to Pine?

1) Lee 2) Spruce 3) Maple 4) Vine

54. 2.503 - .91= 1) 241.2 2) .02412 3) 1.593 4) 15.93

55. 7 ÷ 1/2= 1) 14 2) 1/14 3) 7/2 4) 3 1/2

56. 6.4L=____daL

1) .064 2) 6.4 3) .64 4) 640

57. 5006 + 203= 1) 5109 2) 5003 3) 5209 4) 6219

58. Which is the same as .125?

1) 1.25% 2) .0125% 3) 12.5% 4) 125%

59. 581 x 9.5= 1) 5519.5 2) 763.4 3) 76.34 4) 65.195

60. 2.629 ÷ .55= 1) 47.80 2) 47.8 3) 4.78 4) .478

61. 30 is what percent of 40?

1) 75% 2) 80% 3) 70% 4) 65%

62. The number sentence, (4x25) + (7x1), represents the total value in cents of ___.

1) 4 dimes and 7 pennies
2) 4 quarters and 7 pennies
3) 4 quarters and 7 nickels
4) 4 nickels and 1 dime

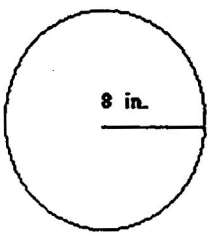
63. 2gal2qt
x6 1) 12gal12qt 2) 5gal 3) 15gal 4) 13gal

64. Evelyn took a survey to find out how many people in her class want to go on a picnic. There are 32 people in her class. Eight of them do not want to go on a picnic and the rest do want to go on a picnic. What percent of the class wants to go on a picnic?

1) 75% 2) 60% 3) 25% 4) 50%

65. A circle has a radius of 8 inches. All points a distance of 10 inches from the center of the circle are

1) outside the circle
2) at the center of the circle
3) inside the circle
4) on the circle



66. 4756 ÷ 4.1= 1) 1160 2) 1.16 3) .016 4) .116

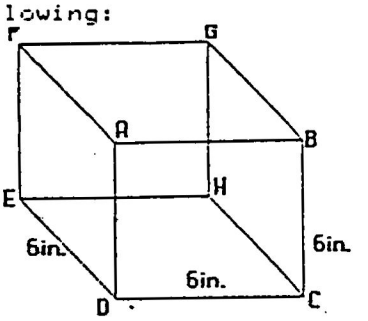
67. Which is the same as 2 4/5?

1) 11/5 2) 2.80 3) 2.45 4) 2.54

68. .4 + 2.1= 1) .25 2) .025 3) 25 4) 2.5

69. 75.04
$\underline{-7.29}$ 1) 82.33 2) 67.75 3) 72.25 4) 67.85

Use the figure below to solve the following:



70. Name the pair of parallel line segments.

1) FG and AB 2) GB and BC 3) AD and AF 4) EF and ED

71. Find the volume using V=l x w x h.

1) 216in³ 2) 2160in 3) .0216in 4) 21in

72. Line segment AD is perpendicular to line segment ____

1) BC 2) EF 3) DC 4) GH

73. Find the surface area using S=2(lw) + 2(lh) + 2(wh)

1) 2.16in 2) 216in 3) 2160in 4) 286in

74. Find the area of one face using A=bxh

1) 36in² 2) 360in² 3) .36in 4) 286in²

75. How many edges does the above figure have?

1) 4 2) 7 3) 10 4) 12

76. $-3 + -15=$ 1) -12 2) -18 3) -12 4) -18

77. Which of these units should be used to measure the area of a room?

1) kiloliter 2) meter 3) gram 4) milligram

78. $10.175 \div 4.07=$ 1) 2.5 2) 00.25 3) .25 4) 2.05

79. Which of these units should be used to measure the temperature of freezing water?

1) Gram 2) Liter 3) Celsius 4) Meter

80. Iris wants to make a bar graph of the average inches of rainfall in Atlanta during May, June, July and August. What information does she <u>not</u> need to make the graph?

1) Average inches of rainfall in Atlanta in May
2) Average inches of rainfall in Atlanta during August
3) Average inches of rainfall in Atlanta five years ago
4) Average inches of rainfall in Atlanta during July

81. 3qt1pt
<u>+7qt1pt</u> 1) 11qt 2) 10qt2pt 3) 12qt 4) 10qt

82. The Downtown Motel charges $17.65 per day. Mr. Jones rented a room for 4 days. How much was his bill?

1) $80.40 2) $90.60 3) $70.60 4) $60.60

83. 19.5 + 24.302= 1) 43.802 2) 4380.2 3) 4.3802 4) 43802

84. Which describes the order of numerals from greatest to least?

1) 2.5, 2.75, .456, 1.234
2) 2.75, 2.5, 1.234, .456
3) .456, 1.234, 2.5, 2.75
4) 1.234, 2.75, 2.5, .456

85. 12
<u>-1 4/7</u> 1) 3/7 2) 10 3/7 3) 11 1/7 4) 11 4/7

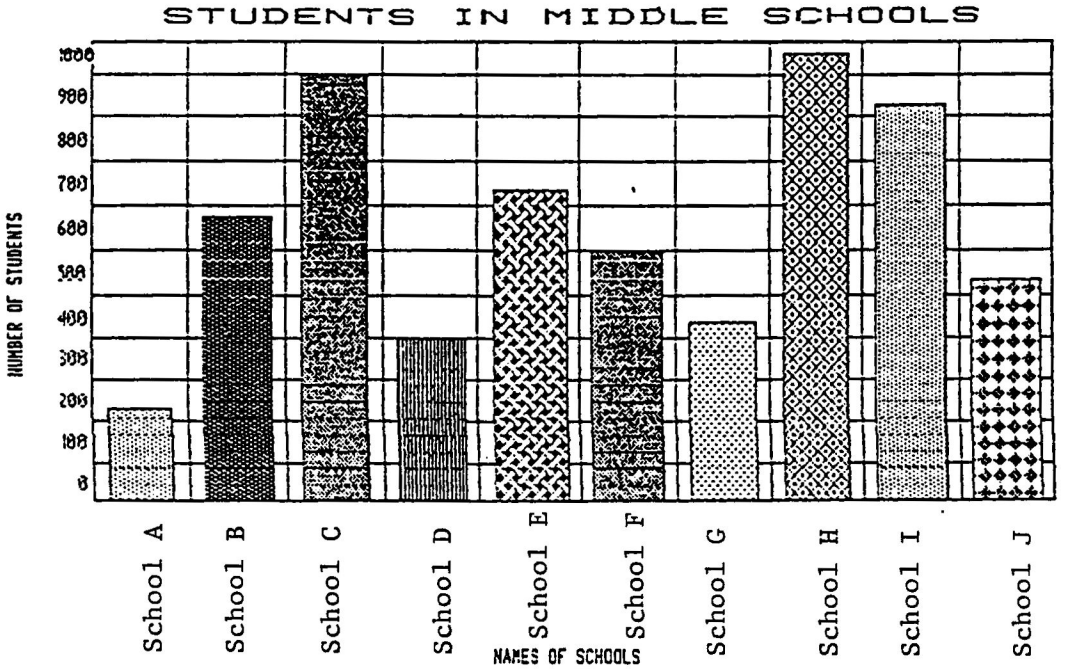
86. Which unit of measurement should be used to measure a football field?

1) kilogram 2) meter 3) liter 4) gram

87. 26 - 17.847= 1) .8153 2) 8.153 3) 18.107 4) 1.8107

88. 9/10 x 2/3= 1) 5/3 2) 3/5 3) 18/30 4) 6/10

89. .7 ÷ .28= 1) 2.5 2) .25 3) .4 4) .4



What information does the graph tell about the students in Middle Schools?

90. Number of schools with <u>less than</u> 500 students

1) 4 2) 3 3) 6 4) 2

91. Number of schools with <u>more than</u> 500 students

1) 3 2) 10 3) 7 4) 6

92. The school with the <u>least number</u> of teachers.

1) 4 2) 25 3) not given 4) 1

93. This is a _____ graph.

1) double bar 2) pictograph 3) line 4) bar

94. 2 2/9 ÷ 2 1/12= 1) 16/15 2) 240/225 3) 15/16 4) 1 1/15

95. $-9 \times -8 =$ 1) -17 2) -72 3) $+72$ 4) -17

96. The correct choice for the temperature of cold grape juice is

1) $4^{\circ}C$ 2) $40^{\circ}C$ 3) $24^{\circ}C$ 4) $16^{\circ}C$

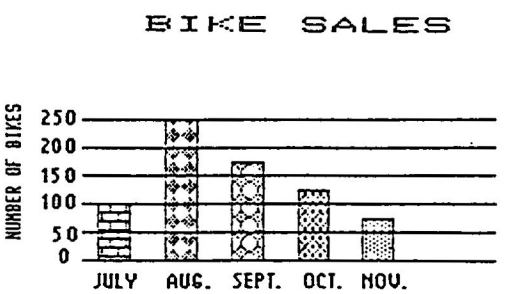
97. The principal of Jones Junior High needs to know approximately how many students will be buying their lunches in the school cafeteria. To get an estimate, he will survey a small sample group of the student population and then apply the results to the total student population. Which sample group would be most representative of the population for the survey?

1) The boys in grade 8
2) The girls in grades 7 and 9
3) All of grade 7
4) One section from each grade

98. Ed weighs 100 pounds. Sam weighs 110 pounds. Alfred weighs more than Ed but less than Sam. How much does Alfred weigh?

1) 120 pounds
2) more than 110 pounds
3) less than 100 pounds
4) between 100 and 110 pounds

99. What information does the bar graph tell you about bike sales?



1) The number of bikes sold each month from July through November
2) The number of bikes and skateboards sold each month from July through November
3) The number of bikes sold in a year
4) The amount of money earned from bike sales in 5 months

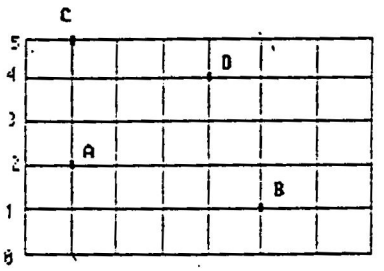
100. Joan wants to measure the amount of milk to add to her casserole. What unit of measurement will she use?

1) inches 2) pounds 3) cups 4) miles

101. 20% of what number is 60?

1) 3 2) 30 3) 120 4) 300

102. If A is the point (1,2), then what point is C?



1) (5,1) 2) (1,5) 3) (1,4) 4) (2,4)

103. Which is another name for five and twenty-three hundredths?

1) 5.23 2) .523 3) 52.3 4) .0523

104. Julia wants to measure the amount of milk to add to her cake. What unit of measurement will she use?

1) meter 2) liter 3) gram 4) Celsius

105. 4000
−213

1) 3797 2) 4789 3) 3777 4) 3787

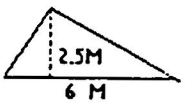
106. Which of these is a prime number?

1) 16 2) 8 3) 10 4) 11

107. 30% of $15.90 is what number?

1) $5.00 2) $3.00 3) $12.00 4) $4.77

108. Find the area. Use A=1/2 bh.



1) $150m^2$ 2) $15m^2$ 3) $75m^2$ 4) $7.5m^2$

109. 7341g=____kg

1) 7341 2) 7.341 3) 73.41 4) 734.1

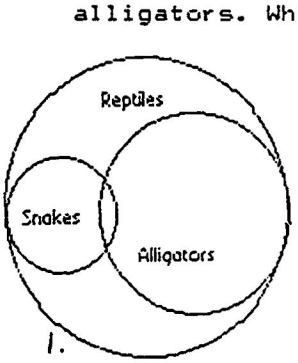
110. Which unit of measurement should be used to measure a track field?

1) yards 2) pounds 3) weeks 4) ounces

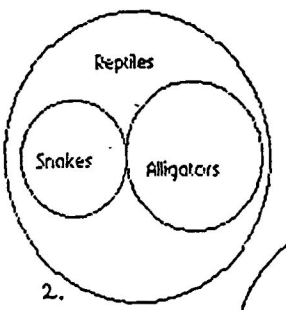
111. Al grows about an inch taller each year. Recently he has been growing twice as fast. In six months, he is likely to grow how much taller?

1) 1/2 inch 2) 1 inch 3) 2 inches 4) 3 inches

112. All snakes are reptiles. All alligators are reptiles. No snakes are alligators. Which diagram shows these statements?



1.



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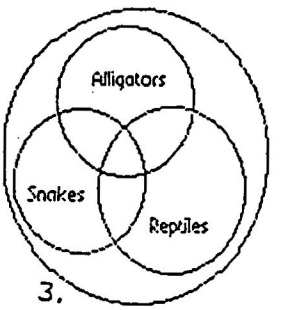

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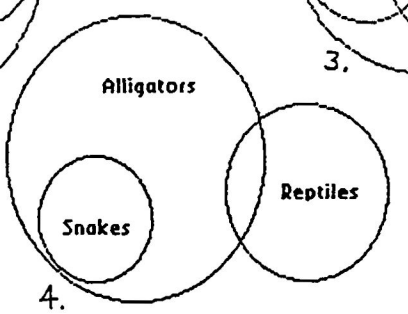


4.

113. If you multiply .1 times .02, your answer will be closer to

1) .1 2) .01 3) .001 4) .0001

114. The best estimate for the capacity of a salt shaker is

1) 1mL 2) 10mL 3) 100mL 4) 1000mL

115. $-8 \div -2 =$ 1) -4 2) $+4$ 3) -16 4) $+16$

116. What fraction equals 85%?

1) 8/5 2) 5/8 3) 85/100 4) 85/15

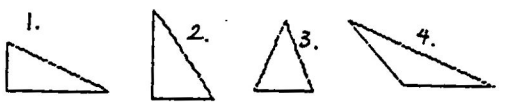
117. $\begin{array}{r} 46006 \\ \underline{+2308} \end{array}$ 1) 47214 2) 48394 3) 58314 4) 48314

118. Sharon wants to measure her weight. One way for her to do this is to use

1) days and weeks
2) feet and inches
3) yards and miles
4) pounds

119. $-6 - -5 =$ 1) -1 2) $+1$ 3) 0 4) -11

120. Which triangle below is congruent to the triangle above them?



121. Willie works 6 hours a day on five days during the week. If he earns $150 for the week, which shows how many dollars he earns per hour? Select the appropriate operation.

1) (6x5)+100 2) 150 . 30 3) 100-30 4) 150 . 6

122. Which is the largest number?

1) .098 2) .3824 3) .5 4) .61

123. The best choice for the mass of a cat is

1) 5.2kg 2) 52kg 3) 520kg 4) 15kg

124. 532mL=____cL

1) 53.2 2) 5.32 3) .532 4) 532

125. Joe charges $2.40 for a baseball. Jimmy bought one ball and paid for it with a $10 bill. How much change will he receive?

1) $8.60 2) $9.60 3) $7.60 4) $12.40

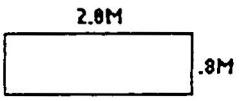
126. Compare 4/7 and 2/3.

1) > 2) < 3) = 4) =

127. Tony bought 12 peaches. They weighed 3.34 pounds. Today he bought twelve more peaches that were larger. How much will these 12 peaches weigh?

1) less than 3.34 pounds
2) the same as 3.34 pounds
3) twice more than 3.34 pounds
4) more than 3.34 pounds

128. Find the area.



1) 1.6m² 2) 16m² 3) .16m² 4) .016m²

129. 935
x27

1) 18,735 2) 8415 3) 718,235 4) 25,245

130. Dave needs to find out how many people in his math club are going to the beach during spring vacation. Which question should he ask them?

1) Do you like to swim?
2) Do you like the beach?
3) Are you going anywhere on vacation this summer?
4) Are you going to the beach during spring vacation?

131. The average number of boxes of candy each person sells if 8 people sell 72 in all is___. Select the appropriate operation.

1) 72 ÷ 8 2) 8x72 3) 8+72 4) 72-8

132. Janet bought some tickets for a raffle. A total of 100 raffle tickets were sold. If Janet has a 1 in 20 chance of winning, how many tickets does she have?

1) 5 2) 10 3) 15 4) 20

133. The amount left after you sell 9 pens from a box of 36 pens is__. Select the appropriate operation.

1) 36+9 2) 36-9 3) 36 . 9 4) 36x9

134. Sandra earns $85 for working Monday through Friday. On Sunday, she earns $60. Which math expression tells the number of dollars earned in a week? Select the appropriate operation.

1) 85.15 2) 60.8 3) 85-60 4) 85+60

Given test scores for eight students: 61, 84, 17, 46, 92, 84, 34, 51

135. Find the median.

1) 84 2) 46 3) 66 4) 56

136. Find the mode.

1) 84 2) 46 3) 66 4) 56

137. Find the mean.

1) 58.6 2) 5.86 3) 5860 4) 5.96

138. Find the range.

1) 84 2) 75 3) 17 4) 92

139. "Little People" Puppet Show collected $403.75 for the Matinee. If the tickets cost $4.75, how many tickets were sold?

1) 50 2) 85 3) 75 4) 65

140. Mary is making a dress. She needs 3 yards of material. If the material costs $3.85 per yard, what is the total cost for material?

1) $9.40 2) $11.55 3) $10.45 4) $12.35

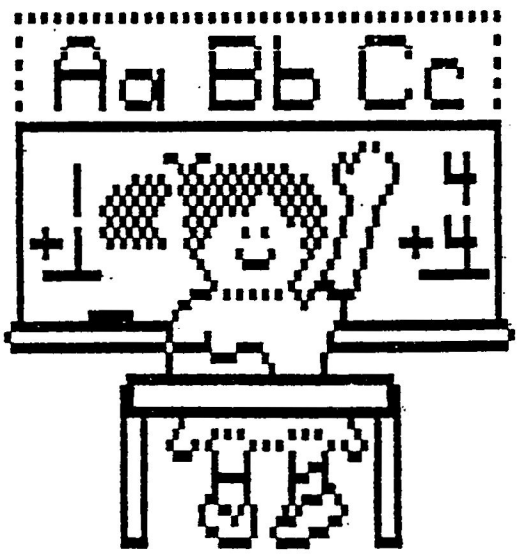
141. $-6 - +5 =$ 1) $+11$ 2) -1 3) -11 4) $+1$

Appendix C

GCRT

INTERVENTION ACTIVITIES

FOR READING



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INEZ THOMAS

JIMMYE VAUGHN

STRATEGIES

FOR

IMPROVING

VOCABULARY

Suggested Activities for Survival Word Bank

1. Read the list of words under each category. Think about whether each word has a positive connotation or whether it has a negative connotation. List the words in each category under positive or negative.

EXAMPLE:

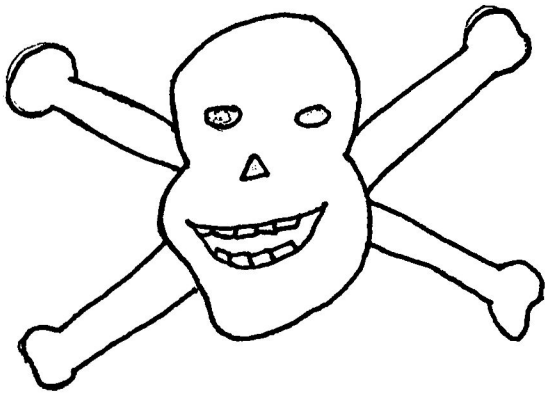
DRUGS		EASY MONEY		SCHOOL	
Positive	Negative	Positive	Negative	Positive	Negative
aspirin	cocaine	job	pimping	studying	disruptions

2. Read each list of words. Group the words in each list according to similar meanings. Write a brief paragraph telling why or how the words in each group you created are similar.

SURVIVAL

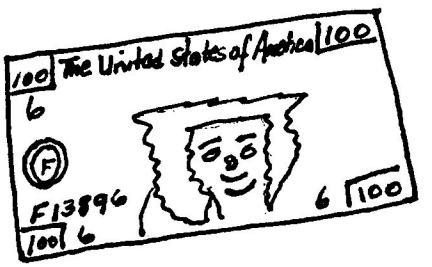
You can survive in the streets for days, but school prepares you for a life time.

DRUGS



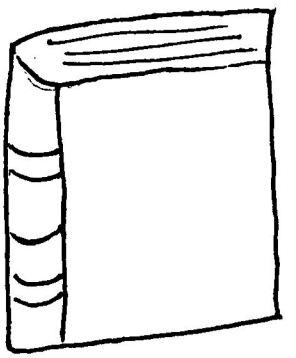
1. stimulants
2. cocaine
3. aspirins
4. wine
5. amphetamine
6. prescription drugs
7. hallucinates
8. uppers

FAST MONEY



1. pimping
2. gigolo
3. prostitution
4. drug trafficking
5. stolen goods
6. ticket scalping
7. cheating
8. peddling

SCHOOL OR READING



1. inattentiveness
2. speaking
3. distractions
4. tardiness
5. cheating
6. class cutting
7. honor roll
8. clubs

9. speed
10. tobacco
11. crack
12. snuff
13. alcohol
14. THC
15. liquor
16. pain killers
17. depressants
18. cold medicines
19. over-the-counter
20. downers
21. beer
22. barbiturates
23. marijuana

9. illegal gambling
10. shoplifting
11. counterfeiting
12. betting
13. pick-pocketing
14. flim-flam
15. bake sales
16. ticket raffling
17. talent shows
18. dancers
19. rent parties
20. community fairs
21. community plays
22. flea market
23. job
24. social security
25. food stamps
26. welfare
27. fundraising
28. hustling

9. organizations
10. sports
11. music
12. reading
13. mathematics
14. writing
15. teachers
16. thinking
17. learning
18. playing
19. friends
20. studying
21. competition
22. counseling
23. role modeling
24. communication
25. PTSA
26. disruptive behavior

MY SECRET IS THAT I've developed a special glossary.

DEVELOP ACTIVITIES WHERE STUDENTS CAN DEVELOP THEIR PERSONAL GLOSSARIES:

ACTIVITY 1 - Fill in the blanks with the correct word.

1. globe
2. United States
3. atlas
4. president
5. Spanish
6. index
7. table of content
8. geography
9. Mexico
10. dictionary

1. The _____ is a sphere.
2. Canada is a country north of the _____.
3. An _____ is a book of maps.
4. Inside Disney World is the Hall of _____.
5. _____ is spoken in every South American country except Portugal.
6. The _____ is located in back of book.
7. Find Atlanta in the _____ _____ _____.
8. Go to the library and check out a _____ book.
9. The children of _____ have a pinata for Christmas.
10. We will use an abridged _____ for the lesson.

ACTIVITY 2

How many words can you find in the puzzle?

1. globe
2. United States
3. atlas
4. president
5. Spanish
6. index
7. table of contents
8. geography
9. Mexico
10. dictionary

YOU CAN WORK IN PAIRS ::::::::::::::::::SMILE!!!!!

G P R E S I D E N T S
L E B C D N G M Q A D
O X O M A D F H I B I
B P M G E E G C E L C
E M H U R X C Q R E T
W A K E N A I B O O I
V I C T T Q P C S F O
Z T J L M A B H O C N
I G A K C D E F Y O A
M S P A N I S H G N R
A H J K L M N O P T Y
B P Q R S T U V W E Q
C A X Y Z A B C D N Z
D N C T I O N A R T B

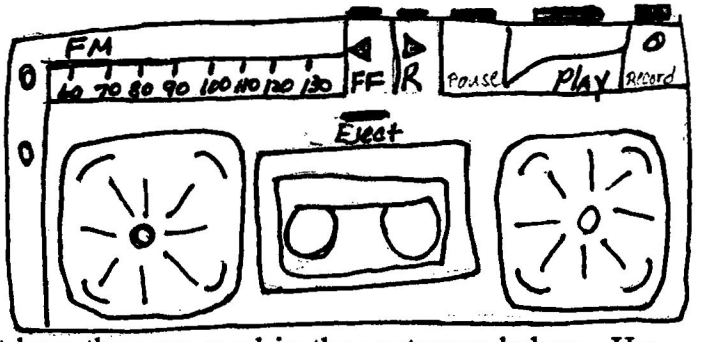
Extension of Experiences

1. Write a paragraph using the 10 words from the list. Use as many as possible.

2. Find as many antonyms and synonyms as possible.

MY SECRET IS THAT I've developed a special glossary.

DEVELOP ACTIVITIES WHERE STUDENTS CAN DEVELOP THEIR PERSONAL GLOSSARIES:



ACTIVITY 1:

Radio-Cassette players are very popular among teens. Many terms that relate to the radio can be used in other situations.

Define the radio terms, then look at how they are used in the sentences below. Use your dictionary to define each word as it is used int he sentence.

Glossary of RADIO terms

eject -
forward -
pause -
play -
speaker -
record -
reverse -

1. John was ejected from the game.
(eject) - _____

2. The post office will forward our mail to your new address.
(forward) - _____

3. We will pause for a moment of silence.
(pause) - _____

4. Nellie will lay "Dorothy" in our production of "The Wiz."
(play) - _____

5. The class gave the speaker a standing ovation.
(speaker) - _____

6. Melissa will record the minutes during our meeting
(record) - _____

7. Mr. Roberts reversed his decision and did not allow the party to take place.
(reverse) - _____

YOU CAN WORK IN PAIRS::::::::::::::::::::SMILE!!!!!!!!!!

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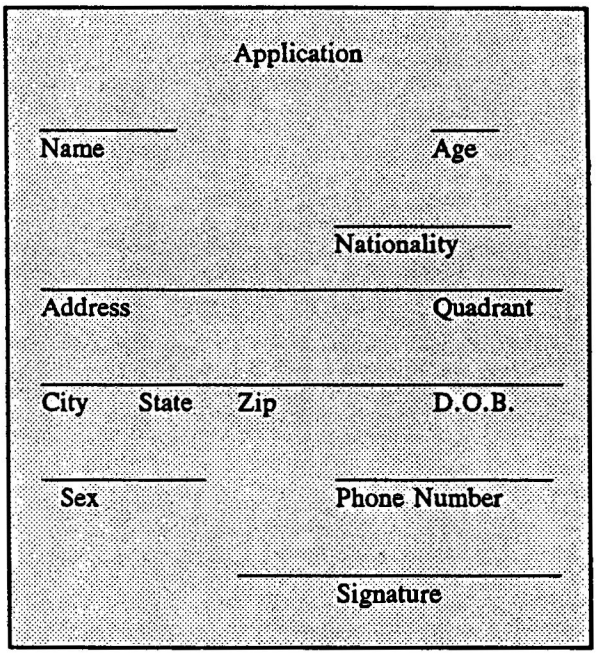
ACTIVITY 1

Many young people are interested in finding summer work. Do you know the terms that are needed to complete an application? Look up the listed vocabulary so that you can "Get a Job."



ACTIVITY 2

Nationality	Quadrant	Zip code
Employer	Social Security	Occupation
Employee	Exemption	Signature
Residence	Income	Deduction

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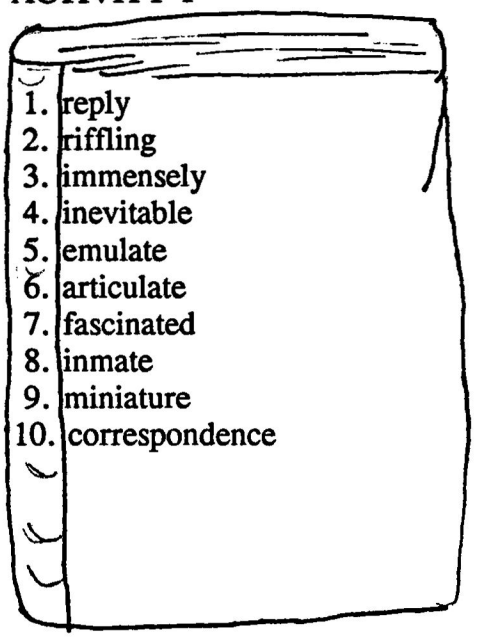
ACTIVITY 1



Using the ten words from the autobiography of Malcolm X, do the following activities:

1. Find the word in the article.
2. Write the sentence where the word is found.
3. Write what you think the word means.
4. Write the dictionary meaning.
5. Use the word in your own sentence.

ACTIVITY 2

1. Using a Thesaurus, write a synonym for each of the above words.

2. Write a story using as many of the twenty words as you can.

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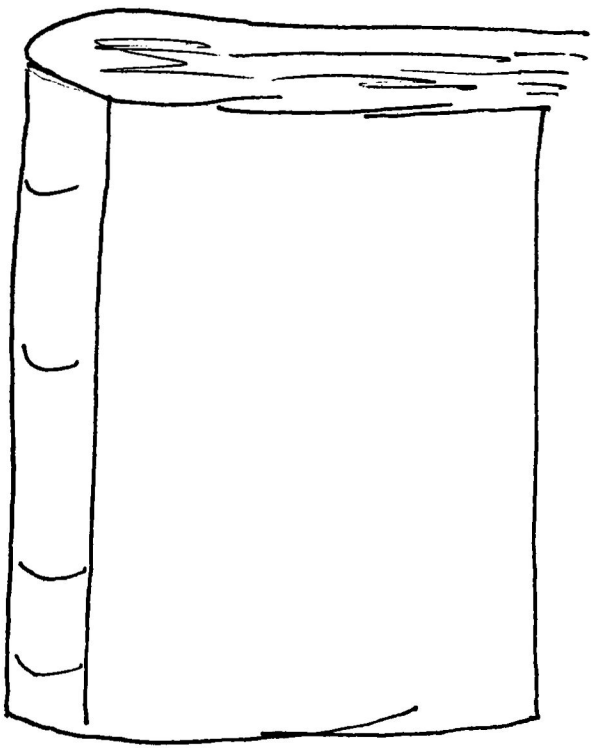
DEVELOP ACTIVITIES WHERE STUDENTS CAN DEVELOP THEIR PERSONAL GLOSSARIES

ACTIVITY 1



1. Select ten words from the autobiography of Malcolm X and write them in the book.
2. Write the sentence where the word is found.
3. Write what you think the word means.
4. Write the dictionary meaning.
5. Use the word in your own sentence.

ACTIVITY 2

1. Using a thesaurus, write a synonym for each of the words you selected.
2. Write a story using as many of the words as you can.

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DEVELOP ACTIVITIES WHERE STUDENTS CAN DEVELOP THEIR PERSONAL GLOSSARIES

ACTIVITY 1

For each speech practice, read aloud the five sentences below to facilitate pronunciation of words in a series with the same beginning sound - ALLITERATION!!!

1. The prisoner's protege projected the plagiarization of a playwright's play.

2. Amnesia averted the avowed villain.

3. Parsimonious payments plagued the poors passage to the party.

4. The miserly misnomer mystified many mongrels.

5. Do jealousy and jeopardy jibe?

NOW, you must define the words above in order to understand the meanings of the sentences. THEN, translate them into your very own words.

ACTIVITY 2:

IT'S YOUR TIME to use the words below in sentences of your own. Add any like-sounding words to enhance your sentences. Define the words to make sure your sentences are grammatical. GOOD LUCK!

misnomer	mystify	miserly
villain	validate	voracious
nuisance	nullify	newly
omen	omit	onerous
conflict	condone	conditional

YOU CAN WORK IN PAIRS::::::::::::::SMILE!!!!!!!!!!!!!

Learning Centers - Mastery. Pretest each concept being presented. Students will have a specific time limit to complete all assignments (5) days. Day 5 will be used to test concept. Rotate students through each area in order and according to their levels. Present materials or worksheets that increase in levels of difficulty to accommodate all students.

DAY 1: All students take pretest for assigned concept to determine level of competency. Check pretest with class. If time permits introduce the concept.

DAY 2: Introduce the concept if not done on DAY 1. Approximate time 20 minutes. Each student will complete 3 worksheets. Students will work at their own pace and correct each worksheet before proceeding to the next worksheet. 70% or better is mastery on worksheets only. If student fails a

DAY 3: worksheet, they will be retaught the concept in a mini-lesson by peer-teacher.

DAY 4: Complete worksheet activities and peer-teaching.

DAY 5: Preassessment test - correct in class. Mastery for those students who pass at 80% or better. Give these students enrichment work. Students who have not passed preassessment test give a reinforcement work sheet. The assessment test for all students who have not passed the preassessment test will be given on the first school day following the preassessment test. Correct reinforcement worksheets before giving final assessment test.

ADDITIONAL NOTES:

1. Preassessment or final assessment test CANNOT be given to any student not completing the 3 assigned worksheets.
2. Assign homework sheets on day of instruction and day 3.
3. Learning Center is to be established every other week or when a new concept is to be introduced.
4. Good for teaching basic skills and vocabulary.
5. Be sure all instructions for using the learning center are clear and concise. Do not confuse the students. Post directions in plain language for using the learning center.
6. Grading system for mastery learning:

80 - 86% = C
87 - 93 = B
94 - 100% = A

Scales apply to both preassessment and final assessment test scores.

Victory at the Inn

Have you read the novel, Robbery at Victory Inn? The pilot involves a pretty young lady who plays the guitar and a smart young man who masterminds a robbery at the very exclusive Victory Inn.

In the first few scenes, the beautiful Maria seems incapable of any wrongdoing. However, as the plot unfolds, the criminal element becomes evident. Maria holds the attention of the audience with her melodious singing, while her accomplish, Dan, circulates throughout the audience to pick out those who appear to be most successful. As the customers pay for their food and drink, Dan notices that many of these persons are carrying large sums of money.

As the unsuspecting victims leave, still under Maria's spell, Dan robs them at gunpoint. He and Maria rush to their car and jump in with broad smiles on their faces. They had succeeded again - or had they. The car would not move; the battery was dead. Dan and Maria were stuck at the end of the barrel of a 45 magnum. The shrewd Detective Cash, who was aware of their scheme, arrested them without a fight. There truly was victory at the inn that night.

Inez Thomas

My Creative Story

As I sit here trying to write a creative story, thinking of how I'm going to put my imagination to work, with seven words that I didn't even choose, I came to the conclusion that the resource persons picked the wrong morning for this. I tried desperately to concentrate pretty-much as to how I was going to approach this story, but I kept getting interruptions, too many as a matter of fact, from my loyal comrades. I thought about taking a novel approach but then I thought -- that was too conservative, so I got this smart idea to just start writing and maybe, just maybe, I'd come up with something.

I got stuck on the very first word on the activity sheet -but quickly found a place for it. Wished I could have used it the way I've seen it happen -- if you get my drift. Funny how you are asked to write creatively and somehow you must remember to hold back your real feelings for fear you may hurt someone else's -- but that's the American way.

Well, I guess I've done enough for creativity today. The scenes in this room today have been creative enough -- don't you agree?

G. M. Horton

Sadly, Pal looked about, refusing to whimper and feel sorry for himself. People continued passing him by hour after hour, day after day, without as much as a glance in his direction. How many times had this scene been replayed over and over in his mind? At this point, Pal wished the truck driver, who had hit him, had killed him rather than just crushed his legs. The driver did not even stop. Surely, Pal thought, he was a drunken driver on his way to total destruction.

A vacationing family, who was just passing through, had found Pal and taken him to the local Humane Society. He had been repaired and had survived with only a minor limp.

Pal was not pretty at all; he wasn't even attractive, but oh was he smart! His cleverness showed in everything he did. But lately no one had given him a chance to do anything.

Pal had pretty much given up all hope of anyone ever adopting him, and he had decided to starve himself to death. After all, dogs can stand but just so much rejection too!

Then one day when nothing outstanding was really happening, birds were not singing particularly loud, the sun was not shining especially bright, and Pal was not feeling exceptionally well, a wonderful little blind girl came to the Humane Society. She was looking for a little dog that she could care for and love as a good friend. As she slowly moved through the cages, she heard the saddest, most novel whine. Led by her ears to the sound of Pal, she carefully approached the cage and placed her hand in to soothe the crying and desperate puppy.

"Sure," Pal thought, "I've been touched by softer hands and still been passed over." Pal had steadily "stuck to his guns" and not eaten anything - well, very little of anything. After all, other animals were always talking about "hold fast to your dreams." But then again, Pal figured in his weakened state, this is more like a nightmare.

He was still being stroked softly by those wonderful little hands. Then, he heard her say, "Daddy, Daddy, this is the one I want. I must have this one, please!"

"A scene right out of a novel, right?" thought Pal in his barking.

By this time, the cage was unlocked; the papers were signed; Pal was up in the

little girl's arms; the little girl was happy; and the smartest dog east of the Mississippi considered himself "the pick of the litter!"

VAUGHN
Arline
Loomis
Hollingshed

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